PRINTING EQUIPMENT ENGINEER

- A Technical Publication for Mechanical Executives
- Responsible for Printing Production and the Selection and care of Printing Equipment and Supplies

OCTOBER 1932

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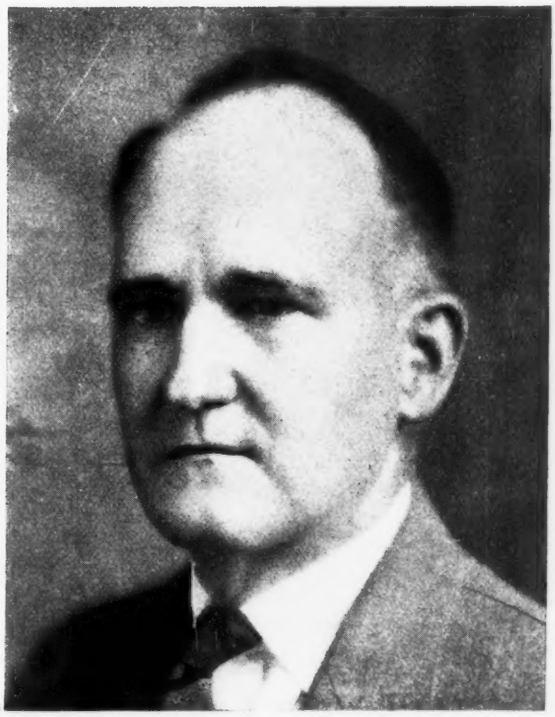

W. A. CARNS

This is one of the advantages afforded by the Ludlow System of display composition which appeals to W. A. Carns, the able mechanical superintendent of the Birmingham News and Birmingham Age-Herald, two of the most important daily newspapers published south of the Mason and Dixon line. But there are many other advantages as well. Mr. Carns writes:

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PRINTING EQUIPMENT ENGINEER

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Let others also read *The Engineer*

After you have read this copy, pass this magazine along to the other men in your organization. They will undoubtedly get helpful ideas from its pages.

Check in left column after reading. Note articles of interest.

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☐ *Superintendent Press Room*

☐ *Chief Composing Room Machinist*

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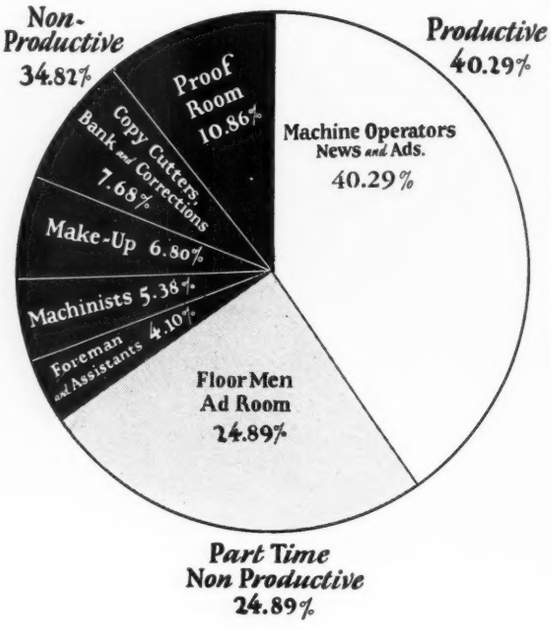
DURING normal times, only 50c of the average composing room dollar was spent for productive labor. The accompanying chart shows the break-up of the average composing room force and the average composing room dollar for the year of 1929.

34.82% of the force is full time non-productive; one-third of the floor men — ad room time (24.89% of force) is non-productive correcting office and store proofs; 12% of the operators' time (40.29% of force) is non-productive correcting office proofs on ads and news, no allowance for store proofs on advertising.

So at best, 50c on the dollar is spent for non-productive time.



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The use of Black & White processed matrices will positively reduce errors at least 25%. We guarantee it and prove it. This saving will show an increase in productive time on the part of operators, correction bank and floor men in ad alley and reduce time of proofreaders. And these increases and reductions will cost you no more than 10% of what you now pay proofreaders to mark proofs. Write!

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PRINTING
EQUIPMENT
ENGINEER
October, 1932

Air Conditioning in the Printing Industry

By WALTER J. OTTINGER*

Mr. Ottinger Discusses What Can Be Done with Air and Why It is Desirable to Control Its Temperature and Moisture Content in the Printing Plant.

IN OUTLINING the application of air conditioning to the printing industry, I make no claim to originality of material. The science of air conditioning is based on natural laws as old as the ages, and its application, like the art of printing itself, is the result of many years of experience.

It is hoped to make clear a few common-sense reasons for considering air conditioning as a part—not a frill or an afterthought—of the production equipment of every high-grade printing shop.

Let us consider briefly the materials with which we have to deal.

Paper is essentially a cellulose product, made from wood, cotton, linen, or certain other vegetable fibres, singly or in combination. In the manufacture of paper, a wet mat, carried on a fine wire screen, is dried and rolled, under accurate moisture control. Loading of mineral material, such as clay, chalk or lime, and sizing of glue, starch or rosin, are used to add strength, stiffness or hardness. In addition, some papers are coated with a mixture of adhesive and mineral materials, such as fine clay, to improve their appearance and ink-taking properties for certain purposes.

Rollers are a compound of various substances. Probably a fair average would be 75% to 80% of glue and glycerine, both substances highly sensitive to moisture.

Inks are essentially pigments or colors, varnishes and driers, in literally thousands of varieties and combinations.

Air is a mixture of gases, consisting of about 78% nitrogen and 21% oxygen, the rest being made up of argon, carbon dioxide, hydrogen and other gases.

*Mechanical Engineer, Cleveland, Ohio.

NO SUCH THING AS FRESH AIR

It is well to bear in mind that there is no such thing as fresh air. You and I depend for life upon the same supply of air used by the Indians and whoever inhabited this country before them. The shell of atmosphere surrounding our planet, estimated to be not more than eight miles thick, has supported life as long as life has existed on this earth.

What, then, is the difference between what we call, for want of a better name, "fresh air," and the stale, contaminated air which we find so oppressive? What we term "fresh air" is nothing more nor less than pure air, containing the vital elements as they are supplied by Nature at her best. Let us consider just what can be done with the original mixture of gases, known as air.

WHAT CAN BE DONE WITH AIR

In the first place, physical impurities can be added or subtracted. Likewise, chemical impurities can be added or subtracted, or one or more of the gases can be made use of in chemical reactions. Heat can be added, or subtracted. Likewise, pressure can be increased or decreased. Moisture can be added, or subtracted. Air can be moved. That is all that can be done with the air we breathe.

There is a definite inter-relation among the factors named, especially temperature, humidity and air motion. For example, if we start with a definite quantity of air at a definite temperature and pressure and a definite amount of moisture, and heat that air, keeping the pressure constant, the volume would increase slightly, as shown in Fig. 1.

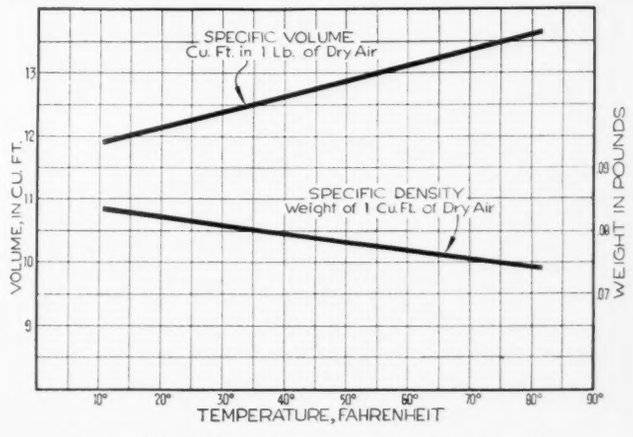

Fig. 1.—The Effect of Temperature on the Volume of Air.

The ability of that air to hold moisture, however, is immensely increased, in fact, it is approximately doubled for each 20 degrees increase in temperature. Fig. 2 shows the

Executive Mortality

[An Editorial]

A well-known man of affairs in the printing industry called on the editor the other day. During the course of the conversation he stated it was his observation that three out of eight mechanical executives (superintendents and foremen) in the commercial and newspaper branches of the industry have either been demoted or have lost their jobs within the last few months.

This is a startling statement, if true. No doubt a certain percentage of these losses of jobs has been caused by suspension of business and consolidations. Another percentage has been brought about through some printing concerns having an insufficient volume of business to warrant the services of a full-time superintendent so that a number of executives who have been demoted are now actively serving as foremen of departments although still retaining their former titles.

We are unable to say what percentage of executive mortality may be laid at the door of inflexible and obsolescent thinking processes. Certain it is that a mechanical executive must imbibe his employer's concern for efficient and ultra-economical operation during the time when business is at a low ebb. It is an unpleasant situation when the period of retrenchment arrives. When the boss's business has decreased to such an extent that it become a matter of grave concern there is nothing left for the mechanical executive to do but trim his sails accordingly.

Unwillingness on the part of some mechanical executives to adjust their administrative methods to present conditions in the industry may account for a considerable percentage of executive mortality.

Management is inclined to specialize in cost investigations just now even to a greater extent than in normal times. It is a wise mechanical executive who will be able to weather the present lull in business by forgetting a more prosperous business period and whose mental processes function in the *present*.

The major portion of the differences arising between management and the mechanical executive must necessarily revolve around questions of economical operation in relation to the volume of business. For this reason the mechanical executive who knows his costs intimately can talk intelligently about them. In addition to operating economically it is just possible that he will be in a position to suggest to management ways and means of eliminating operating extravagances for which he is not responsible and which have been brought about as a result of office policy.

New ways and means for handling the work should be devised. In striving to accomplish new ways of doing things some mistakes will be made, of course. The average employer, however, will give you a break even for quite a percentage of mistakes if he feels that you are operating economically at least fifty-one per cent of the time. In clinging to old ways and means of handling work you may be creating what might be called operating luxuries. In this class fall obsolete methods, obsolete processes and obsolete machinery. Just because some methods have been used over a long period of time it does not follow that they are the best methods to use in a recessional period. This is a different era than existed yesterday. Today's conditions require new treatment.

In some cases, mechanical executives have permitted their pride to outweigh their better judgment in the matter of salary reductions. Curtailing your own prerogatives and some of the liberties heretofore enjoyed may not be the most pleasant thing in the world, but it is just as well to exercise the right of self-preservation by taking the prescription which you are expected to administer to the working force.

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relationship between air temperature and moisture-holding capacity, or absolute humidity.

MEANING OF RELATIVE HUMIDITY

By relative humidity, we mean the percentage of moisture in the air at the temperature named, based on its total moisture-holding capacity at that same temperature.

Now for any given temperature, there is a definite amount of water vapor which a given amount of air will hold in suspension. This is known as the saturation point, or 100% relative humidity, and the temperature is known as the dew point. It will then be evident that if we increase the temperature of air without adding moisture, we reduce its relative humidity; if we lower the temperature, we increase its relative humidity. In Fig. 3 we have shown what happens in two specific instances, starting with air at 50% and 100% moisture content.

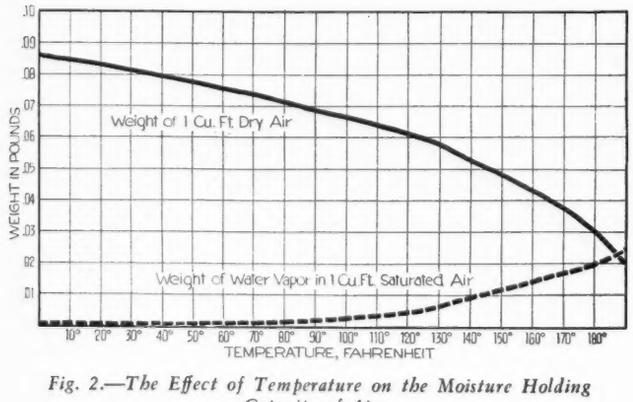


Fig. 2.—The Effect of Temperature on the Moisture Holding Capacity of Air.

Now if we lower the temperature of the air below the dew point, the excess moisture will be deposited on any cool surface. Common examples of this precipitation are the sweat that forms on the outside of a glass of ice water in the Summer, the dew of the early morning and the frost on the inside of window panes in Winter.

AIR HAS AFFINITY FOR MOISTURE

Air has a tremendous affinity for moisture. Whenever we heat air, we greatly increase its moisture-holding capacity. Now if we do not add moisture artificially, the air is going to take it from wherever it can be obtained. In our homes, moisture is drawn from our furniture, rugs, draperies and from ourselves. If we fully realized the harm done by the hot, parched air of our so-called comfortable homes, we

would never rest content without adequate provision for a supply of life-giving moisture.

INJURIOUS EFFECT OF "DRY-KILN HEATED" ROOMS

In Fig. 4 I have plotted two curves, both taken from the statistics of the United States Public Health Service, based on many thousands of cases. Notice how exactly the periods of lowest relative humidity indoors correspond with the greatest number of cases of respiratory diseases. The evidence is indisputable.

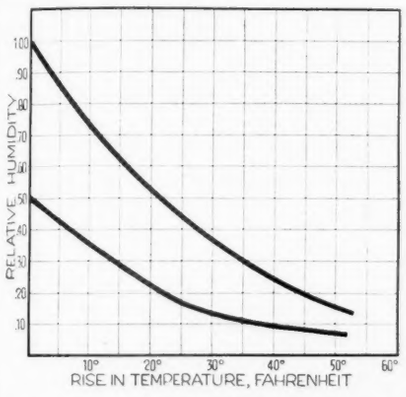


Fig. 3.—The Effect on Relative Humidity of Raising the Temperature of Air Without Adding Moisture.

We have learned how to heat our buildings and we have available the means to provide healthful humidity—but with tragically few exceptions we fail to realize the risks we are running by neglecting to provide adequate humidity. Neither the extreme heat of summer nor the extreme cold of winter do as much damage to our health, our complexions and our dispositions, as does the so-called comfort of our dry-kiln heated homes, offices and workshops.

EFFECT OF AIR ON PAPER, ROLLERS AND INK

In the pressroom and bindery, we also have to consider the effect of air conditioning on paper, rollers and ink.

Inks are dried by mechanical absorption into the paper, by chemical oxidation, or by a combination of the two. The gas heaters on the presses speed up both actions. A very low relative humidity results in too rapid drying, while a moderate relative humidity retards both absorption and oxidation somewhat, making it easier to obtain accurate and uniform impressions.

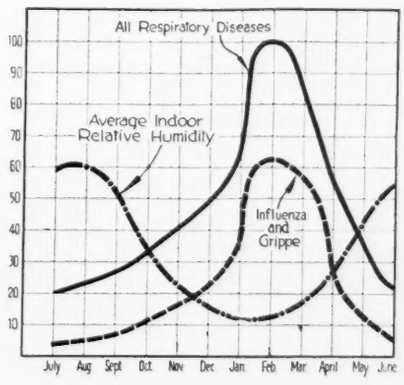


Fig. 4.—The Effect of Relative Humidity on Human Health. Same Scale Used for Per Cent Indoor Relative Humidity and for Number of Disease Cases per 1,000 Persons.

Printers' composition rollers are made of a number of substances, averaging at least 75% glue and glycerine. Both of these substances are sensitive to moisture in the air, glycerine being especially hygroscopic. Every manufacturer of printers' rollers gets "Summer complaints" that his rollers are too soft and tacky, and "Winter complaints" that his rollers are too hard. Both complaints can even apply to the same rollers; furthermore, the rollers expand in summer and contract in winter, giving the pressman something else to worry about.

To a lesser degree, the same troubles are experienced with

Continued on page 24

Investigation of Offset

At the thirty-second annual congress of the British Federation of Master Printers, held recently at Llandudno, the following resolution was carried unanimously: "That this Congress urges the Council to obtain from the Printing Industry Research Association a proposition for a thorough investigation of the problem of Set-off, in conjunction with the other interested bodies in the industry."

The Council of the Printing Industry Research Association welcomes the resolution, and assures the members of the printing industry that if this investigation is carried out every effort will be made to bring it to a successful conclusion, so that one of the major technical difficulties of the printing industry shall be overcome or minimized.

Meeting of Illinois Foremen's Association

The semi-annual conference of the Illinois Newspaper Composing Room Executives' Association will be held Sunday, November 6, at the Hotel Louis Joliet, in Joliet, Ill.

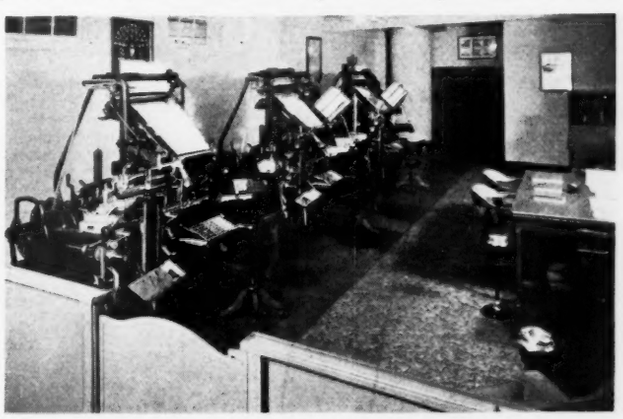
"Management" will be the topic of the afternoon meeting. Every effort is being made to secure one of the best speakers in the middle west on this subject. A separate special conference will be held for composing room machinists to discuss mechanical problems.

George Bolton, of the *Herald-News* and a member of the executive committee, is making arrangements to take the delegates on an inspection trip through the Illinois State penitentiary.

Secretary Anderson requests those who expect to attend to notify George Bolton, care of Joliet *Herald-News*.

Prepares for Greater Increase in Business

Notwithstanding consolidations or suspensions of many newspapers and periodicals, and the failure of several outstanding printing establishments, Intertype Corporation, manufacturers of line-casting machines, is fighting the present business disturbance. According to its officials, the Corporation is proving its confidence in the future by spending a considerable amount of money in pushing its campaign for still more business throughout the United States and the many other countries in which it has sales representatives and has been improving its machines steadily by bringing out new products which will enable the printer and publisher to materially reduce composing room costs at a time when such reductions are most needed.



The Corporation recently leased for its Chicago office another floor in the Parke-Davis building at 130 North Franklin Street, and has redecorated, refurnished and re-equipped the offices and demonstration rooms on a more attractive and liberal scale.

What Does Vibration Cost the Printer?

By B. A. DOANE*

VIBRATION and noise used to be considered as part and parcel of the printing industry. As one gentleman of the old school put it, "I like to feel the vibration from my presses because then I know I'm making money." Today, however, that condition has been completely reversed. When a printer can feel the vibration of his presses, it's costing him money. At first thought this statement may seem somewhat exaggerated and consequently difficult to appreciate.

WHY THE NEED FOR ISOLATION OF VIBRATION?

Vibration from presses has so gradually increased over a number of years, and has previously been so generally ignored that the average printer probably takes it for granted. It has only been in recent years, since presses have so rapidly increased in both size and speed, that the tremendous toll of their vibration has demanded a really effective cure. It might seem that the responsibility lies with the press manufacturer to design and construct a press that does not vibrate. All that is reasonably and economically possible is already being done, but as the engineer knows, the design of any type of machine capable of continued vibrationless operation is beyond the present realm of practical engineering. In the printing press particularly there are so many unbalanced forces as to make this an impossibility. After all, if by a simple and inexpensive method of isolation all of this trouble can be eliminated, why should the impossible be attempted?

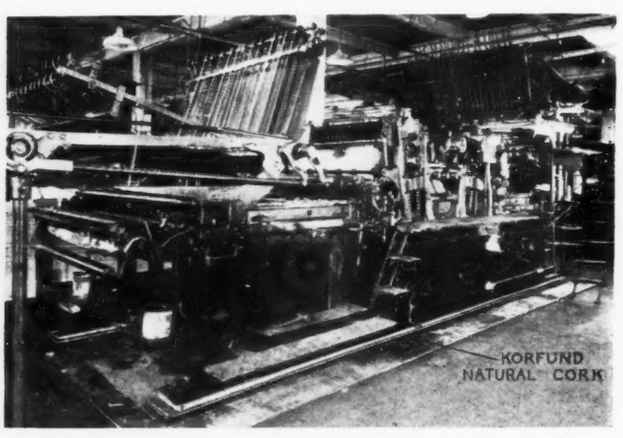


Fig. 1—The above photograph clearly shows the application of natural cork vibration isolation under the skids of a two-color press. Attention is called to the fact that the cork is placed directly in the drip pan of the press, where it is in constant contact with the oil.

CRAFTSMANSHIP AND PRODUCTION

The first and foremost concern of the progressive printer is that the personnel of his organization function at the utmost efficiency. With competition in the printing industry so keen, the matter of craftsmanship becomes increasingly important. Frequently, the only advantage one printer has over a competitor is that intangible factor of craftsmanship. Aside from a degree of perfection in the completed job, craftsmanship implies a better quality of workmanship in less consumed time, and the reduction of error to a negligible quantity. These not only affect the appearance of the job, but also have a marked bearing on the printer's costs for that job. How best to avail oneself of this craftsmanship depends first upon a wise selection of individuals, and secondly upon the maintenance of conditions under which these individuals are able to work with the maximum of efficiency. While every printer has apparently become adjusted to press vibration and noise, can true craftsmanship flourish in such an atmosphere? Scientists have been giving considerable thought and study to just this question. It has now been established beyond a question of doubt that manual laborers, and to a markedly greater extent, mental workers evidence an important let-down in efficiency under working conditions similar to those encountered in most any printing shop. The accident hazard is also much greater for men working under the constant tension of vibration. With this as an established fact, how can the mechanical executive expect the most from compositors, proofreaders, and office employees unless he makes some provision for eliminating this nuisance?

EDITOR'S NOTE

It may not have occurred to many mechanical executives that there is a distinct relationship between production and the isolation of vibration in printing machinery. As Mr. Doane points out in this article, competition in the printing industry is so keen that craftsmanship becomes increasingly important. Frequently, the only advantage one printer has over a competitor is that intangible factor of craftsmanship. Doubtless there are other good reasons why the employer should have plant equipment isolated against vibration, but when the question of craftsmanship (production) and impaired physical condition of machinery are brought up as a result of vibration created by operation of that equipment, then it immediately becomes the concern of the mechanical executive.

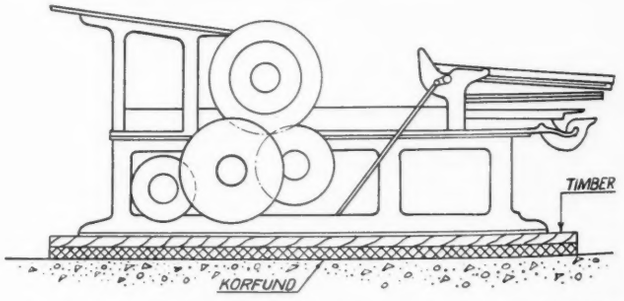


Fig. 2—Diagram showing method of installing natural cork isolation. When skids are used, it is usually satisfactory to install isolation under these skids. For flat-bed presses, the isolation should cover the entire area under the bed-plate.

EVIL EFFECTS OF VIBRATION

Probably the printer's greatest investment is in equipment. Every printer knows and dreads the menace of idle presses. What mechanical executive has not experienced the calamity of press breakdowns during a rush of work? Can one wonder why presses wear and break when they are subjected to constant destructive vibration? On the other hand, the wear and tear on moving press parts is surprisingly small when presses are cushioned on a resilient isolating material. Vibra-

*The Korfund Company, Long Island City, New York.

tion causes presses to get out of level, and twist, resulting in workups and slurs. To obtain perfect register of colors, there should be no vibration. The small cost of adequate isolation is soon paid for by the increased life and efficiency of equipment and less time lost for repairs.

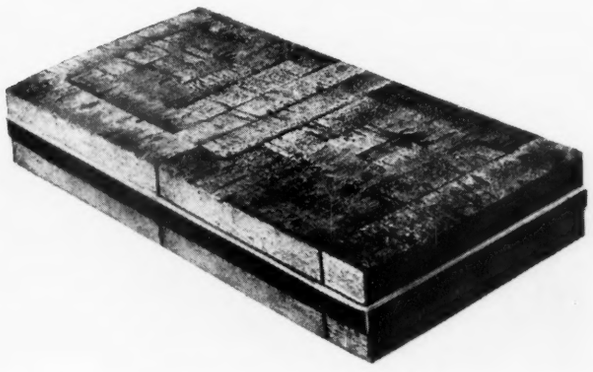


Fig. 3—Notice how the strips of natural cork are fitted into place in the steel confining frame. This steel band is used solely to hold the individual pieces of cork together, and has no reaction on the efficiency of the cork.

NEIGHBORS LACK SYMPATHY FOR PRINTER'S VIBRATION TROUBLES

For obvious reasons, printers frequently find it necessary to locate their plants in the heart of the business district. This means that there are neighbors lacking in sympathy for the vibration troubles of the printer. While certain landlords have a clause in their leases that all printing presses and paper cutters be isolated, as a protective measure for their building structure as well as for the benefit of other tenants, many leave the printer to his own salvation. Should vibration later prove a menace, the printer is forced to install isolation, which means the additional cost of lifting and relevelling all presses. It is therefore the wise printer who provides for isolation with the installation of every new press.

ATTRIBUTES OF ISOLATING MATERIAL

As with everything else, the printer must exercise a certain amount of discretion in the selection of an isolating material. The first requisite of an isolating material is that it have permanent and sufficient elasticity. The isolating material must be such that it displays just the correct cushioning action under the load of the press. It can be neither too hard nor too soft; either extreme is worse than no isolation at all. This resiliency must be permanent. The printer cannot afford to experiment with any product which is adversely affected by time or atmospheric changes. Pure natural cork has been extensively used for this purpose. When supplied in widths and thickness according to the recommendations of experienced isolating engineers, it will thoroughly isolate any printing press. Everyone knows from experience that its resiliency is permanently effective. Despite the fact that a cork may be removed from a bottle after the bottle has been stored for years, the cork is just as resilient and effective as when first used. The fact that oil has no effect upon natural cork is an important point. To demonstrate this, it should be mentioned that natural cork plates are frequently placed under the skids of the press directly in the drip pan, where they are constantly immersed in oil. If anything, the effect of the oil is beneficial to natural cork.

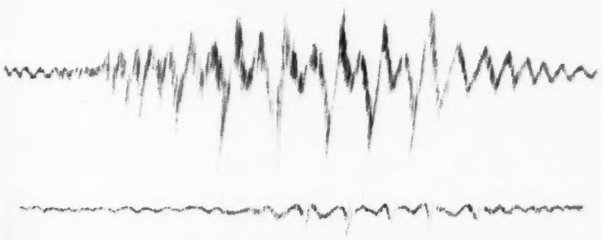


Fig. 4.—To indicate the vibrations before and after installation of isolating material, a Vibrometer is used, which is a non-recording instrument. The Vibrometer indicates both vertical and horizontal vibrations. Two recordings from Vibrographs, taken by L. H. Young, consulting engineer, Boston, Mass., are shown in this figure. The upper panel represents a recording taken on a machine before treatment and the lower panel is a recording taken after the same machine was treated with isolating material.

THE STORY OF NATURAL CORK

The story of natural cork is most interesting. Common cork is the bark of the cork oak. This particular specie of tree grows principally in Spain, Portugal, and a few other limited areas. The trees are usually raised, and the bark gathered, under government supervision. It is a peculiarity of the tree that the entire outer bark, which is unusually thick can be peeled or stripped off without affecting the life of the tree. It must, however, be done at definite intervals, and carefully handled to insure further satisfactory bark growth. This bark is then baled, similar to cotton, and is ready for shipment. When received in this country the cork is trimmed of its rough outer surfaces, and is ready for assembling into plates for machinery isolation, or for any of the other uses to which natural cork is put. This cork is in the form of strips approximately 1½ in. wide and should not be confused with another product, compressed cork, which has been ground, and baked under pressure. Compressed cork may be readily distinguished by its dark brown color, and an odor of burnt cork, while natural cork is of a light tan color, with the thousands of minute air cells, and the grain, unimpaired and clearly visible. The method of fabricating these strips of natural cork into plates for printing machinery isolation is a story in itself, about which the manufacturers of such products will be glad to tell you. If you are further interested, the Editor of PRINTING EQUIPMENT ENGINEER will be glad to send you detailed bulletins on the subject.

Page Cost Contest for S.N.P.A. Foremen

In order to stimulate interest among composing room executives of member papers of the Southern Newspaper Publishers' Association, the New Orleans (La.) *Item-Tribune* is offering a silver cup to the foreman making the best showing in page costs from October 1, 1932, through to May 31, 1933.

The contest is being supervised through Cranston Williams, secretary-manager of the Southern Newspaper Publishers' Association. Three judges to be named by the president of the S. N. P. A. will decide the winning foreman. The winner will be announced approximately 30 days before the 1933 S. N. P. A. convention and the cup will be presented at the convention to the foreman making the best cost record.

The costs taken into consideration in the contest are as follows: 1. All salaries and wages paid for machine composition, machinist, hand ads, heads, make-up, superintendent and foreman and assistants, proof readers, bank, monotype, ludlow and other typecasting machine operators, metal melters, porters; 2. Amount paid for supplies, metal, and repairs. (Heat, light and power will not be considered, since many papers do not keep these items separately.); 3. Total number of pages shall be based on number of pages carried in Main City or Carrier Edition weekdays and Sundays; and 4. On or before the fifteenth of each month a memorandum of expenses (No. 1 and 2) and a memorandum as to the total number of pages (No. 3) shall be mailed to Secretary Williams.

The Technique of Shading Sheets

By ALBERT R. BOURGES*

Mr. Bourges Describes the Advantages and Technique of the Shading Sheet Process Which Is Worked Up by the "Subtraction Method."

TO THE genius of Benjamin Day belongs the credit for the "transfer method" of incorporating shading and other character effects on the negative and plate. This method has been brought to a very high perfection through the skill of the benday artist acquired only after many years of steady application.

Artist Shading Sheets form the photographic method of incorporating all the shading and desired character, direct from the treated copy, all in the original negative. Besides saving in cost and time, this newest method has the added advantage of showing the complete effect before any reproduction work is started.

Briefly, this new product consists of thin, transparent sheets of a safety cellulose base with photographically opaque characters of a benday nature on them. This character is dry and will withstand all ordinary handling, yet is quickly and easily removable from any portion desired (regardless of how fine the detail) by rubbing off with a special wooden stylus or treated stump. Where left, the character of the Shading Sheet will combine photographically with the under detail of the copy or may be photographed separately free of all detail. The copy is in no way affected when the sheet is removed. Any number of tone, color or tint effects may be obtained free from all detail of the copy by photographing separately. Sheets may be used as negatives for printing direct on to the sensitized metal, eliminating photographing on many jobs.

The printed results of the Shading Sheets and the transfer method are so similar in many ways that even the trained eye is sometimes confused. The main difference is in the method employed to accomplish these similar effects which should be of particular interest just now on account of the necessity of not only keeping production costs down but reducing production costs.

In every first-class plant reduction of production costs must be accomplished without any loss of quality or increase in the time element. So that it will be obvious, I will point out the basic differences as briefly and frankly as possible.

In one of the best books on photo-engraving, twenty-one pages are used to describe and illustrate the principal of "Bendaying" in black and white work alone. It takes five years of continuous application before a man is rated as a journeyman benday artist. First-class results have been obtained by this method on first trial. This doesn't mean that the value of skill and experience is lost; on the contrary, it is a medium so flexible that skill, experience and ingenuity can be used to greater advantage than ever before.

Photoengravers and lithographers with their analytical knowledge of dot value and color have the qualifications to make the most of this product and process. In many cases it requires more knowledge and skill to give the correct instructions and make the correct copy for a benday job than it does to prepare complete copy with Artist Shading Sheets. For example, the artist in making a line drawing must indicate the position of benday with blue wash and guide lines or, as is often the case, both for white space to be shaded. In photography, the blue wash is loss, and the benday artist must sketch an outline to shape from copy (in reverse) some-

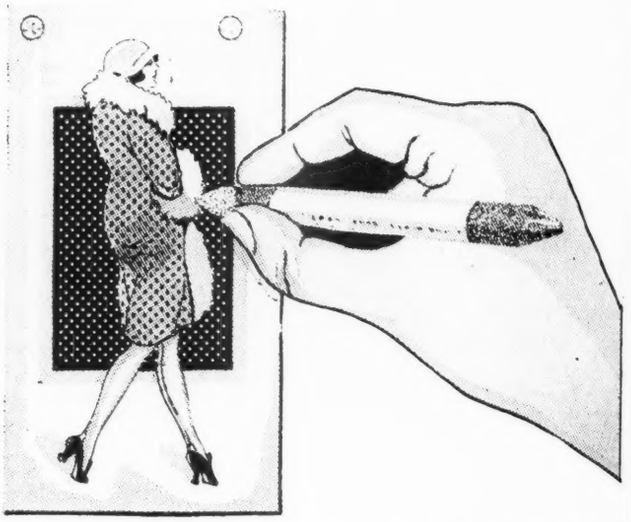


Fig. 1.—This figure illustrates the general method of rubbing off detail from the Shading Sheet where not wanted. The black design was used for gray background and light tone on hand. The darker tone on hand was made by a second sheet of the same design, moved slightly out of register. The white dot design (back of figure) was made with white sheet, while the black dots in the dress were made by the same sheet after these white dots had been made black by rubbing with special greaseless pencil. Reproduced on zinc from one line negative. Incidentally, the hand was worked up direct on a sheet over an actual photograph.

*Consulting Photoengraver, New York, New York.

thing that requires time and considerable skill, unless there is a guide line to show where shading is to stop. In that case, the guide line must be removed after it has served its purpose. The copy may be several times the size of the plate, but a benday tint always transfers same size so that it is necessary to visualize the composite effect of the copy reduced and combined with benday same size.

By the Shading Sheet Method, the desired design is selected by trying out over the drawing without use or damage of sheet. The sheet decided upon is attached over the copy by rubber-cementing or by simply tipping on where there is up-to-date equipment including copy holders that give contact. I can think of no de-

Fig. 2.—At the left is shown a reproduction of a drawing before the application of the various Shading Sheets. At the right is shown a reproduction of the same drawing after treatment. Reproduced from a folder by the Kemigrafiske Anstalt, Norway. Through the use of five Shading Sheet designs an effect of all-hand drawing is obtained.

fense for driving tacks through any kind of copy as an additional time for putting on, taking off and making changes would quickly pay for a good contact frame.

Shading Sheets are worked-up by the subtraction method, that is, what is not wanted is removed, either by quickly rubbing off or by cutting (scratching) to shape which operation should never take any longer than the time required for blue wash and guide lines.

Besides the advantage of seeing the complete effect before any reproduction expense is incurred, there is the advantage of getting everything in one negative that will give the etcher only one uniform resist to work with instead of having two or more resists to contend with. An indisputable good reason for expecting deeper and cleaner plates makes this process of direct interest to the artist, who gains or loses, according to how his work is reproduced. It is of interest to the electrotyper, who gets credit or blame according to the depth and cleanness of duplicates even when so much is beyond his control, and to the pressman, whom I think loses the most religion from shallow plates, often caused by having to stop etching of benday parts because the top was lifting (a defect no engraver's proof will show), and finally to the publisher, who must please his advertiser, and the advertiser who must get results from his advertisement that as a rule averages over 50% illustration.

Probably the greatest saving is accomplished in the simplest way; that is, the "graying up" of large solid blacks. Aside from the more uniform appearance that this gives a newspaper page, there is an actual saving in ink consumption which more than covers the entire cost of plate work on long runs. It is also easier to print a large gray space even than a solid black space of the same size because the small holes in the plate are like so many little air cushions that help release the paper thus reducing the pull more than 50% when the plate printing has been reduced only 50%.

Now the cost of obtaining this condition is practically nothing when the entire solid is grayed an even tone all over, for the reason that you simply lay the proper white Shading Sheet over the entire black space at the time of making the negative (which you would have to make in any case) and after photographing, the piece of the sheet is as good as before, and the copy is the same. Practically no additional time has been consumed as no work had to be done on the sheet, white detail over white space photographing white and only the black being affected.

A saving is also made where the copy calls for benday in both blacks and whites. This can be done at the same time with Shading Sheets so that the complete effect is obtained in the one negative; while by the benday transfer method there is a double hold-up for benday ing the negative for blacks and then the plate for whites.

In articles to follow it is planned to illustrate specific examples showing how it applies to best advantage with special reference to newspaper problems. How color can be added to the newspaper page without adding to the present amount of cost and grief will also be illustrated.

The writer invites questions on any statements not clear and will elaborate on any angle of interest to most readers. If the writer knows your wishes in time, he will take pleasure in trying to give all the information wanted.

TELEPHONE SILHOUETTE

Victor H. Smith, Cleveland typographer, constructed this telephone silhouette from stock materials as follows: One 18-pt. Monotype dot; one 12-pt. Monotype triangle, trimmed at the top; 3 pieces 12-pt. rule; 1 piece 3-pt. rule, and 2 pieces of 2-pt. rule. The rule was trimmed to size on a composing room saw-trimmer.

Handling Newsprint—Its Economy

Courtesy SCRIPPS-HOWARD NEWSPAPERS*

The first installment of this treatise on newsprint handling methods appeared in the August ENGINEER *and was devoted, principally, to unloading and storing newsprint rolls together with illustrations and descriptions of handling equipment. The September installment dealt with causes and remedies for damaged newsprint. This is the third and final installment of the series.*—EDITOR.

It should not be necessary to slow down for mill splices. In fact, only a few mills are flagging splices today.

The importance of good pressroom splices justifies the care required to make them.

If your presses are equipped with tension belts, cut tails on the end of the spare roll. The centers of the tails should correspond with the centers of the tension belts. The method of attaching splices with tails is the same as for attaching square-cut splices as explained in the following paragraphs.

To splice rolls for presses that do not have tension belts, cut the end of the spare roll straight across. Be sure to make a clean cut and to remove all broken edges. Then fasten the loose end to the spare roll with light grease or vaseline. It is important that you do not use too much grease or vaseline for this step.

Next, spread a thin film of adhesive (made by boiling a compound of resin and oil together) on the outside edge of the loose end. Use a spatula or table knife for spreading the adhesive, and be certain to spread it evenly and thinly.

The film of adhesive should be put on about ½ in. from the outside edge of the loose end. If it is put too close to the edge, it may cause the edge to stick to the roll and foul the splice. If it is put too far from the edge, the edge may turn back.

After two rolls have been spliced together, cut off the edge of the old roll as close to the point of splicing as possible.

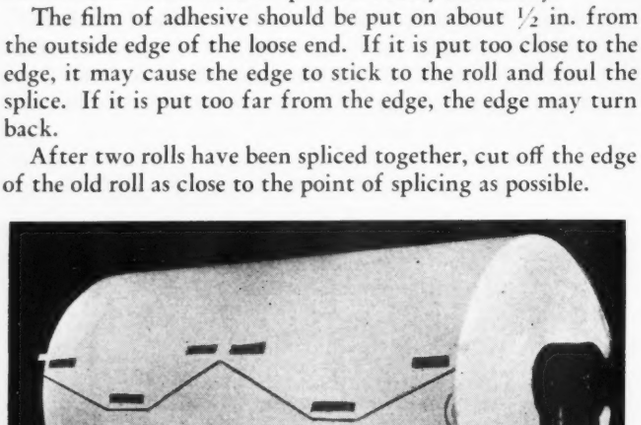


Fig. 16

Carelessness in rubbing down splices is probably the biggest reason why splices do not hold. *Every splice should be thoroughly rubbed down by hand.*

To further insure a good splice, spray the ends of each roll with water as soon as the splice has been made, Fig. 17.

Spraying equipment is not expensive. If it is not desirable to run ½-in. water pipes to each unit, so as to be able to attach a fruit tree spraying head to each pipe, an inexpensive portable tree spraying outfit can be bought. They hold about 2 gal. of water, and receive their pressure from a hand pump.

These fruit tree sprayers are excellent for pressrooms. Rolls can be moistened sufficiently without throwing a mass of water.

Have boxes with markers (flags) in them handy to, and on each side of every roll spindle. It is a good idea to use colored markers and to have glue already on them. Having these markers easily accessible and ready to use saves time and assures their use.

Markers (flags) should be put on both ends of every roll at the point of splicing so the fly boys can easily segregate papers with splices in them.

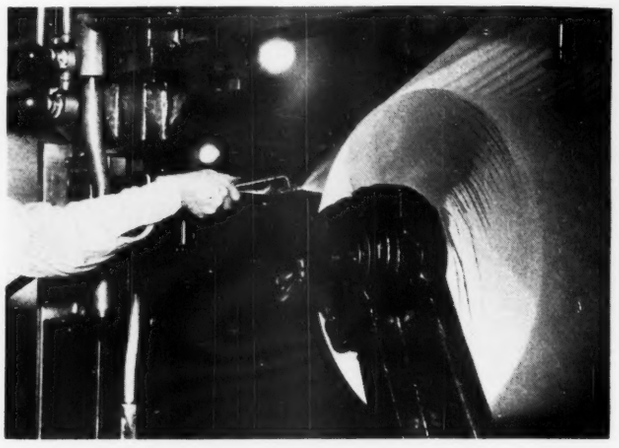


Fig. 17

Some white waste can be saved in threading presses by pushing the web through the cylinder up to the assembly roller while the press is motionless, instead of using the press to lead sheets through. After the web has been pushed to the assembly roller, then the press can be started to take the web to the folder.

Have all pressmen plate at the same time. This is not only the most efficient way to plate presses, but it also saves white waste because it is not necessary to revolve the press for each pressman.

First, register all cylinders so that each is set for the first plate. When all of the first plates are on, then revolve the press into position for the second plate.

When getting ready for a fast edition, this economy can still be effected without losing any time by not beginning to plate until all of the plates have been received except the two starter plates.

As each pressman completes his lockup, have him put a marker on the edge of the sheet. The pressmen will save time if boxes for holding markers are handy to each cylinder. Use colored markers with mucilage on each side of them.

The fly boy knows that when the last marker has come through the folder that all of the old papers are out and that the remainder can go to the mailing room.

Align all ductor rollers so that all of them are away from the drums or fountain rollers at the same time. Then it will only take a minimum number of revolutions to put ductor rollers into proper position when presses have been finished with for the day.

DURING THE PRESS RUN

Have the circulation department give the pressroom a standing order, as far as possible, for the number of copies

*Copyright 1932, Scripps-Howard Supply Co., Cincinnati, Ohio.

which will be needed of each edition. This will help the pressroom to arrange for the most economical run of each edition in advance of starting the presses. If the standing order is to be changed, have the circulation department notify the pressroom of it in writing. Furnish the circulation department with special forms for this purpose. Have the increase order printed on one color of paper and the cancellation order on another. This avoids misunderstandings.

If you have any speed runs, stop the presses when you only have four or five hundred copies of the preceding edition to produce, provided this edition is not also a speed run, and

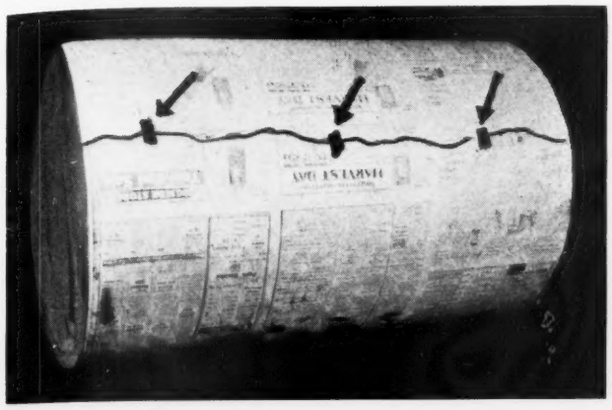


Fig. 18

put fresh rolls on all units. Then should any of the fresh rolls be defective, you will have a chance of finding it out on a slow edition instead of on a speed run when minutes count and press stops are costly. Besides, less paper will be used in making splices at that time, than if you wait until the preceding edition has been completed to make splices, and then have to run the splices through and waste all of the printed papers of the preceding edition that must necessarily be in the press.

When it is necessary to remove a web, break it at the assembly roller and rewind paper on to partly consumed roll. Paste tail to roll with gummed paper. When this roll is used again, web up with printed tail and thereby save printed press waste.

Spraying the ends of rolls with water saves a lot of press stops. It improves the performance of splices, eliminates dust and static from electricity. In pressrooms where rolls are sprayed fewer breaks from the fibers in the edges of the rolls take place. Spraying the tight end of a roll that is unwinding unevenly helps it.

It should not be necessary to slow down for mill splices. You may lose one occasionally. If you do, recover the splice with the number of the roll it has been taken from, the name of the mill that shipped it, the car number and the date on which it was shipped.

How close to the core you should run is a question that can only be determined by a knowledge of conditions in a particular pressroom. However, the following general factors have a bearing on the question:

The web is frequently lost in trying to run too close to the core. The resultant delay and waste more than offsets the slight saving to be had beyond a reasonable limit that would avoid losing the web.

To get the most out of every roll, and to avoid losing webs, see that the roll spindles are properly illuminated.

ELIMINATING STATIC

Static is often the bane of the pressroom. It is due to any one of a number of things, which makes it a discouraging trouble to overcome.

Here is a description of a simple rigging that will eliminate nearly all static troubles. It can be installed on any press at practically no cost.

The principle is to have a piece of No. 16 copper wire run across and within ⅛ in. of the web on the No. 2 impression cylinder.

Bolt a small piece of steel to each side of the frame of the press. Turn the free end of each piece of steel to a 90 deg. angle so that the free ends point toward each other. Then attach a turnbuckle to the free end of each piece of steel. Fasten a piece of No. 16 copper wire between the turnbuckles so that when it is drawn taut it is within ⅛ in. of the web. The wire should not touch the web, but the closer it comes to the web without touching it, the more effective it will be.

DECREASING DAMAGED PAPERS

Decrease the number of damaged papers by having fly boys sort out perfect sections of papers rejected because of splices, and then combine perfect sections into good papers.

The sections with splices in them can be combined into whole papers for checking purposes. They can also be distributed to the press crews to read during shut-downs in place of perfect copies.

The mailing room or fly boys can also decrease damaged papers by correctly refolding by hand, papers that are rejected because the press fold is out of place. If the circulation department objects to such papers going on the street, then they can be used for checking purposes, and in some cases (but not to advertisers) for dead-head distribution.

DISPOSAL OF WASTE

Unfortunately, laxness seems to characterize the disposal of newsprint waste in most plants. It will only take a small part of the time of someone in the office to set up a system for handling waste to the best advantage.

As a general rule more can be realized by using as much of the waste as possible for your own needs, than by selling it —particularly core waste.

These flat sheets can be used for office forms, second sheets, wrappers, copy paper, etc. If all of it cannot be used, then effect a tie-up with a job printer, pad manufacturer, book binder, shippers of plate glass, crockery, fruit, vegetables, etc., to take the surplus whenever and as it accumulates.

The commercial market usually wants sheets 17 x 22 or 25 x 38 in., or multiples thereof. It is well to remember this when constructing a machine for cutting flat sheets. If you do not have a quantity of core waste to justify building a machine for cutting it into flat sheets, then seek a market for it among organizations, societies, clubs, etc. They can use long sheets of newsprint as table covers for outings, dinners, picnics, etc.

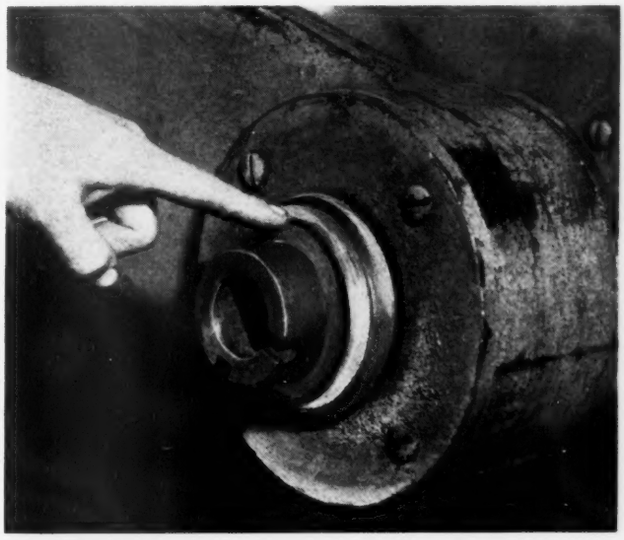


Fig. 19—This illustration shows how a core chuck can be ground so that the operator can see at all times how far the web is from the core. This eliminates guesswork.

Keep the waste separated according to the various markets. This is important if you really want to get the most for your waste. Some kinds of waste bring nearly twice as much as others. But when it is mixed waste it usually brings the lowest price. For instance, keep waste that is not printed in registering presses, separate from waste that is actually printed.

Make it easy for your men to keep waste separated by constructing crate-like bins for each class of waste, and put a label on the wall over each bin as to the kind of waste that is to go into it. Besides enabling you to get more for your waste, you'll be pleased with the way these bins will help the men keep the pressroom neat.

Commission merchants buy pressroom white waste for fruit and vegetable wrappers, crate liners, etc. Publishing plants use it for slip sheeting and putting between books when they are being packed for shipment.

Use unprinted loose white waste for towels in wash rooms. Tear or cut it into sheets 20 x 25 in. and hang on a hook.

Commission men sometimes use wrapper waste for crate liners, too. One publication that we know of sells all wrapper waste to a contractor. He uses it for insulators and sound deadeners between floors and walls, and for protecting concrete forms from inclement weather.

One publication finds a remunerative market for wrappers among poultry dealers who use it for dropping boards of roosts and on floors of brooders for baby chicks.

Publications using non-returnable cores can sometimes reduce fuel bills by burning the cores and plugs.

Enforce a rigid rule that no paper may be removed from storage, press or mailing rooms without a written order.

The most dependable market for waste is a reliable paper dealer. Know them all, but select the one who you find can be depended on to take your waste whether the market is brisk or dull. This more than offsets the slight advantage some dealers can offer when the market is brisk, but who refuse waste when the market becomes dull.

INCIDENTAL METHODS

A perpetual inventory of the paper in your own building enables the pressroom department to know at any time how many pounds of paper of each size roll are ready for use, thus helping to overcome finding out at the last minute that rolls of a certain width are out.

A simple arrangement is to cut cards, 3 x 4 in. from wrappers. The man who receives the paper enters the width, roll number and weight of each roll on one of these cards as it is delivered to him. The roll number is entered above the line, the weight below. He delivers these cards, together with the delivery invoice (which shows the total number of rolls and their weights), to the pressroom office at the end of each day.

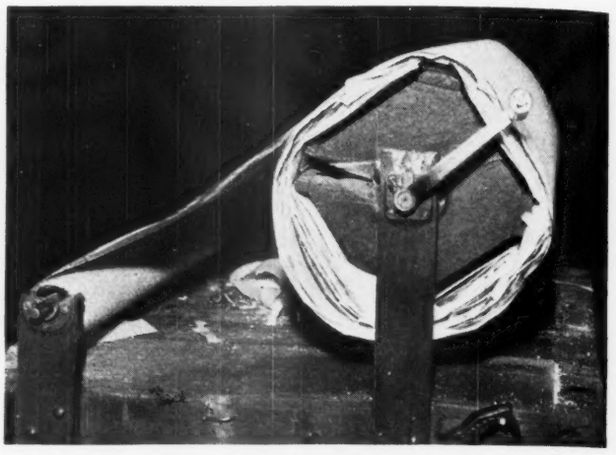


Fig. 20—The machine illustrated is a home-made device for unwinding cores so that the paper can be cut into flat sheets.

The press crews make a report showing the width, number and weight of each roll used during the day.

Cards for the rolls used are removed from the file. Then a count is made of all rolls on hand, except those actually in the press. This count should agree with the number of cards in the file.

One publication reports having used this system for twelve years, and in this time have never had a roll which couldn't be accounted for. This fact alone commends the system.

Chases, Numbering Machines and Use of Colored Inks on Dark Paper

By W. W. HITCHNER*

TRUSTWORTHY apparatus, the first condition of good printing, is needed now more than ever before. When press work was done from small forms upon small hand presses, out of alignment in a page or a form often passed unnoticed. Authors and publishers of today are much more critical. A slight deviation from squareness repeated on the pages of a large form is not only offensive to the reader, but is a hindrance to the pressman and binder.

Chases with shifting cross-bars seldom receive proper care. The chases and their detached bars are usually stood up against a wall, where they are bent by the weight of other chases and bars piled against them. They are often allowed to become bruised and rusty. The bars are sometimes used as pokers or levers. Bars made for one chase are many times violently forced into another; slots and dovetails may be refiled and clumsily altered. Under this rough treatment the chase may be twisted and made crooked.

Chases should be bought with system; there need not be many sizes, but there should be many of the same size as required for certain size presses. As cross-bars are not made interchangeable, each bar should have its own number stamped on its dovetail and on the frame nearest to its corresponding slot in the chase. Under no circumstances should the cross-bar made for one chase be forced into another chase, for this change damages two chases. When many chases of one size are provided, and each chase and cross-bar numbered, the time spent by the stoneman in fitting new forms with furniture and in adjusting margins will be considerably reduced.

Continued on next page

*Superintendent of Pressroom Production, The Robt. O. Law Co., Chicago, Ill.

TRADE LINOTYPE MARK

LINOLITE MAGAZINES

22 Pounds Lighter yet Cost No More

In many shops from one to two tons of unnecessary weight is now being lifted during every shift. Count the number of magazine changes made in your own shop in a single day; multiply that by the difference in weight between Linolite and brass (22 pounds, for example, on the standard 90-channel magazine) and see how much backache you could save by changing to Linolite. Linolite is an alloy specially developed for magazines that is just as satisfactory as brass in every way and ever so much lighter.

MERGENTHALER LINOTYPE COMPANY
BROOKLYN, N. Y.

SAN FRANCISCO · CHICAGO · NEW ORLEANS
CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA
Representatives in the Principal Cities of the World

Linotype Metro No. 2 Family

Numbering machines may be worked in any position except with "No." or operating plunger nearest the gripper edge and at right angles with the cylinder. In this position the cylinder depresses the plunger, then passes on to the figures. The dials turn when the plunger rises, so that they are trying to turn while being printed, resulting in slurred figures and torn packing. This is true of any cylinder press. If hard rollers are used when numbering, do not set them too low, as they may operate the machines. Avoid soft packing on long runs, as the plunger will work into the packing and then fail to turn numbers. A piece of press board will resist the plunger pressure for a long run. Some of the old type numbering machines will not operate if locked up too tightly. Test the plunger with the fingers and make sure it rises freely. Clean the machines thoroughly after using. Then tie a string to each machine and suspend it in a bottle of light machine oil or kerosene until ready to use again.

PRINTING COLORED INKS ON DARK PAPERS

Quite often the pressman is called upon to print a two, three or four-color job of outline engravings or type on colored cover stock. Frequently the stock will be a gray, green, brown or possibly black. Now, every pressman knows how difficult it is to print a good red over a gray stock, or a white over black. To print on good, hard-surfaced cover stock it is absolutely essential that the proper ink be used, for without it the task becomes hopeless. If it is a dark-colored stock and you must use an ink of bright color or white, then by all means select the very best cover ink you can buy, because even with the best you will have to use all your skill to produce satisfactory results. The ink must be opaque so that when printed on a dark background it will not permit the dark color of the stock to show through, but will retain most of its natural brightness. It must possess a maximum amount of pigment and should not be reduced unless absolutely necessary. If a reduction of the tack of the ink is required in order to make it work better, then an ink ground in a thinner varnish should be used. All kinds of oil reducers and varnishes have a tendency to make the ink less opaque and for this reason should be left out when endeavoring to print a film of light ink on a dark background.

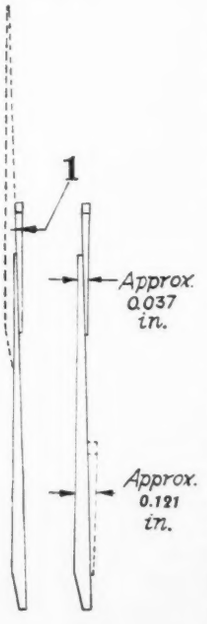
Most colored inks used for general purposes are either transparent or translucent, and are seldom opaque. The hue of a transparent color is changed when it is printed on a paper of dark hue. Its chroma or brightness is almost completely killed. Transparent inks are, as a rule, very brilliant and attractive. They possess a high chorma, but lose this brilliancy when the background is darked than the tone of the ink. This is because the color of the stock shows through the film of ink and darkens the color. White becomes a dirty gray; red a poor or gray brown, while yellow loses the brightness for which it is noted and takes on another color or shade, depending of course, upon the color of the background or stock with which it mixes.

It is not always possible to obtain satisfactory results with one impression when printing colors like red, yellow, bright green, orange, etc., on darker colored stock even when the best inks are used, for no matter how much we try to avoid it, the brilliancy of the film of ink is dimnished to a certain degree, depending upon the relative value of the colors in question.

To improve a job of this kind, the pressman usually runs it through the press twice at least, using the same form and the same color of ink. The first color acts as a sizing and shuts off most of the dark background, so that the succeeding color or colors are stronger and cleaner. The first color or printing should carry enough impression to iron out the stock and about 0.003 in. less impression should be run on the second or succeeding printings. This will lay the ink on the surface without piling up on the edges.

Spaceband Gives Greater Justification Range

ALONG with the invention and development of the Teletypesetter it was found necessary to provide an automatic and flexible justification means for the spacing between the words in order to eliminate thin-spacing those matrix lines which would not otherwise be expanded to the full limit of the measure being composed. It is customary on manually-operated machines to insert the thin spaces by hand.



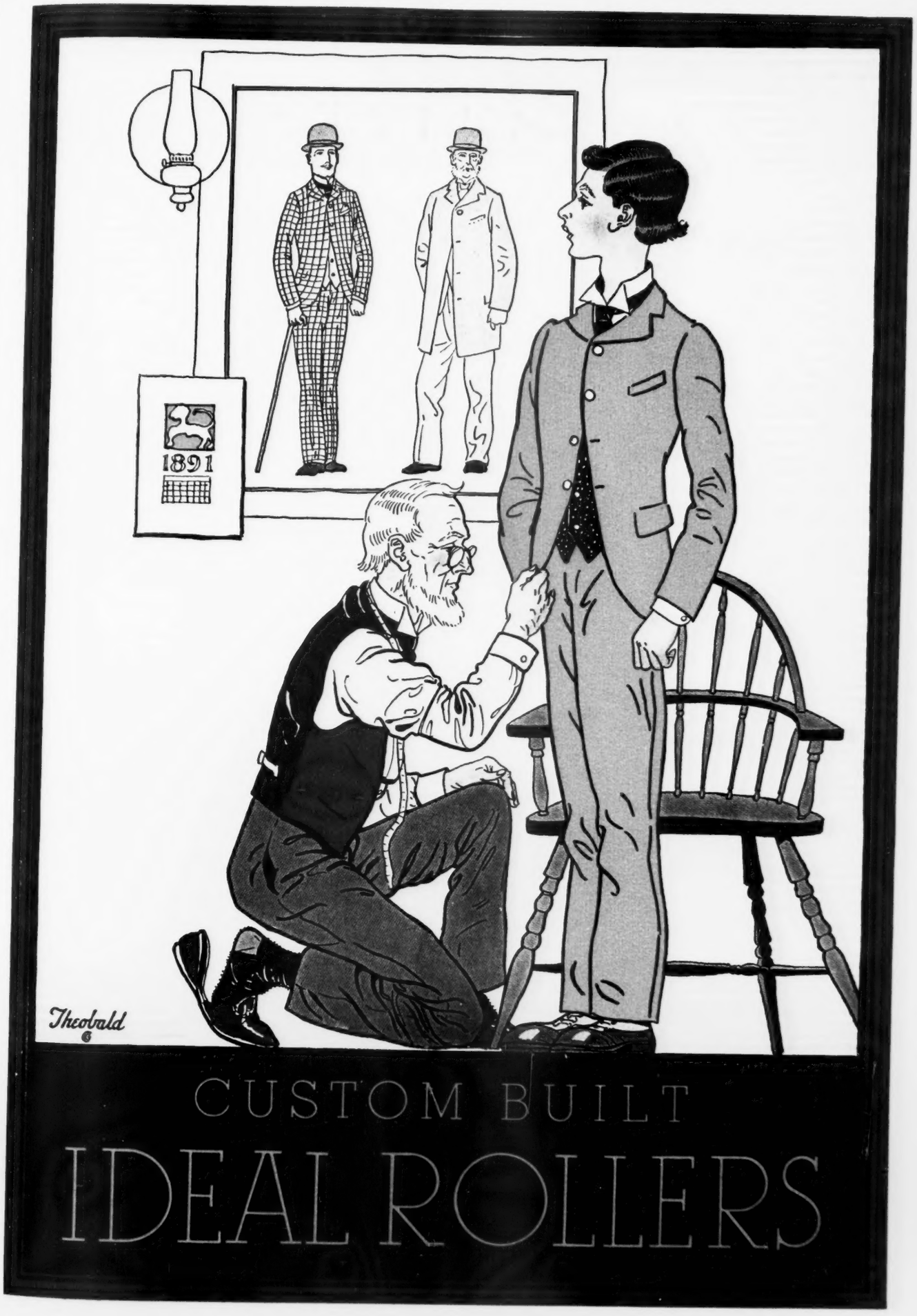
At the Cincinnati conference of the Mechanical Department of the American Newspaper Publishers' Association, Walter W. Morey of the Teletypesetter Corporation, and inventor of automatic composition, described the workings of the mechanism.

During the discussion Mr. Morey said:

"You probably wonder how it is that we get so many lines down into the assembler without thin-spacing; whereas, if you watch operators, about every five or six lines they are working on the assembler, dropping thin spaces and transposing them next to the spaceband. We have developed a special size of spaceband which we find operates much better with our equipment. The minimum thickness of that band is about 0.0012 in. less than the regular thick band. It also has about 0.021 in. more taper, or greater spreading capacity, than the regular thick band. In other words, if a thin space is needed in the line, the thin space is already on the taper of the spaceband. It is not necessary to put it in because it is put in there and provided for with the setting of the line.

"The Teletypesetter spaceband is quite a thing. It is a standard spaceband which may be obtained either from the Lino-

Continued on page 28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See reverse side

September Printing Patents

Printed copies of patents are furnished by the Patent Office at 10 cents each. These may be obtained by addressing the Commissioner of Patents, Washington, D. C.

1,872,916. PRINTING MACHINE HAVING AUTOMATIC FEEDER. William K. Eckhard, Dunellen, N. J., assignor to R. Hoe & Co., Inc., New York, N. Y., a Corporation of New York. Filed Dec. 29, 1928. Serial No. 329,139. 20 Claims. (Cl. 271—46.)

1. In a printing machine with the sheet feeder, a sheet decelerator, a sheet registering mechanism, shafts supporting the decelerator and registering mechanism, and a frame supporting the shafts.

1,872,943. HALFTONE PROCESS AND TYPE. Henry R. Harvey, San Francisco, Calif. Filed Aug. 2, 1930. Serial No. 472,551. 11 Claims. (Cl. 101—399.)

1. A type font for reproducing pictures in halftone comprising a succession of characters, whose printing surfaces vary by logarithmic graduations.

1,873,102. PAPER FOLDING MACHINE. Henry F. Beehman, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek Mich., a Corporation of Michigan. Filed Jan. 31, 1925. Serial No. 6,088. 6 Claims. (Cl. 270—76.)

1. In a folder: a pair of folding rolls one of the rolls being adjustable toward or from the other on an arc, swingable supports carrying the adjustable roll, and means for adjusting the swingable supports to move the adjustable roll toward or from the other roll; with non-intermeshing pinions on the adjacent ends of the rolls, a train of gears for communicating motion from one roll pinion to the other the distance between centres of all gears which mesh being constant, whereby the rolls are held in constant positive uniform gear drive in all positions of the adjustable roll; the adjustable roll being movable on an arc substantially concentric with the center of the gear meshing with the pinion thereon.

1,873,207. METHOD AND APPARATUS FOR PREVENTING OFFSET IN PRINTING. Theodore E. Knowlton, New York, N. Y. Filed July 20, 1931. Serial No. 551,917. 20 Claims. (Cl. 101—417.)

8. A method of preventing offset in printing characterized by printing a blank upon one face, supporting the blank on a platen with the printed side in contact with a finely meshed metal layer of screening, supporting the layer of screening on a granular surfaced layer, and printing the reverse side while in contact with the layer of screening.

1,873,232. WEB MOISTENING DEVICE. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed June 4, 1926. Serial No. 113,592. Renewed Nov. 17, 1930. 8 Claims. (Cl. 91—14.)

1. In a printing press, the combination with means for feeding the web through the printing couple to the folder and means for slitting the web, of moistening devices for moistening that portion only of the web which comprises the two outer edges thereof and means for moistening that portion of the web which comprises each side of the slit so that the two edges bordering the slit will be moistened.

1,873,233. PLATE CARRYING CYLINDER. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Original application filed May 26, 1926, Serial No. 111,787. Divided and this application filed Apr. 6, 1929. Serial No. 353,199. Renewed June 10, 1932. 8 Claims. (Cl. 101—378.)

1. A printing plate cylinder having a series of round recesses bored into it between two plates on the cylinder, a plate clip having a cylindrical holder set into each of the recesses, the holder having guides in which the clip is adapted to move freely in a longitudinal direction and means projecting from both ends of the base of the clip for limiting its longitudinal motion in the recesses.

1,873,234. INK SPRAY CONDENSER FOR PRINTING MACHINES. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed Feb. 3, 1931. Serial No. 513,118. 5 Claims. (Cl. 101—350.)

1. The combination with an inking device, of an enclosed chamber surrounding the inking device, and means for withdrawing the ink-laden air therefrom and re-liquifying the ink to prevent the particles of the ink being carried out into the pressroom with the air.

1,873,235. INKING MECHANISM. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia Original application filed May 26, 1926. Serial No. 111,787. Divided and this application filed Apr. 6, 1929. Serial No. 353, 198. 14 Claims. (Cl. 101—350.)

1. In an inking mechanism for a printing press, the combination with an ink cylinder, distributing roll and pick-up roll, of a fountain located below the pick-up roll, a fountain roll, gearing for driving the ink cylinder, distributing roll and pick-up roll from the press, a shaft extending down from the pick-up roll to the fountain, means for driving the last named shaft from the pick-up roll, and a gear on the fountain roll driven by said shaft.

1,873,301. PRINTING PRESS AND FUDGE ATTACHMENT. Edmund W. Dean, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich., a Corporation of Michigan. Filed July 16, 1930. Serial No. 468,379. 15 Claims. (Cl. 101—219.)

6. In a printing press, an impression cylinder comprising similar complemental parts each part having a body portion of less diameter than the cylinder proper and a part-cylindric portion projecting beyond one end thereof; and means for supporting the parts in axial alinement; the parts being relatively longitudinally adjustable.

1,873,316. DELIVERY MECHANISM. Michael A. Droitcour, Providence, R. I., assignor to Harris-Seybold-Potter Company, Cleveland, Ohio, a Corporation of Delaware. Filed Dec. 8, 1928. Serial No. 324,672. 18 Claims. (Cl. 271—74.)

1. In a delivery mechanism, a reciprocating sheet carrier including movable tapes to support the sheet tiltable downwardly to deposit the sheet from the tapes on a pile.

1,874,013. ROTARY COLOR PRINTING PRESS. Christen R. Kaddeland, Shelton, Conn., assignor to Harris, Seybold, Potter Company, Cleveland, Ohio, a Corporation of Delaware. Filed Apr. 8, 1927. Serial No. 181,966. 72 Claims. (Cl. 101—184.)

1. In a multi-color press, a plurality of printing couples each having gripper means and independent, normally inoperative means for separating the couples, a normally disconnected latch relay mechanism positively controlled and simultaneously actuated by the tripping movement of one of the couple separating means for placing in operative position, at a predetermined point in the cycle, another of the separating means, and a transfer cylinder of greater number of gripper units than any cylinder in a couple.

1,874,134. KEYBOARD MECHANISM FOR TYPOGRAPHICAL MACHINES. Samuel E. Sperry, Hollis, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a Corporation of New York. Filed Aug. 24, 1931. Serial No. 559,068. 10 Claims. (Cl. 199—25.)

1. In keyboard mechanism for typographical machines comprising a frame, a plurality of cam yokes, and power means for actuating the cam yokes, yieldable means for removably mounting the cam yokes in the frame while retaining them in operative relation with the power means, and means acting on the mounting means for locking the cam yokes against removal.

1,874,149. PAPER FEEDING MACHINE. Lester Kyle Aldrich, Sidney, Ohio. Filed Feb. 24, 1931. Serial No. 517,961. 8 Claims. (Cl. 271—46.)

1. A paper feeding machine including a continuously rotating pull-off device for feeding the sheets from a stack, a main gear designed to be actuated by feeder driving mechanism, a plurality of relatively fixed gears connected with the pull off device for actuating the same, and a bracket pivoted at the axis of the main gear and provided with a plurality of shiftable gears each of which is adapted to be carried by the movement of the pivoted bracket into mesh with one of the relatively fixed gears, whereby the speed of the continuously rotating pull-off device may be changed, the ratio of the gears being such that the higher lineal speed of the pull-off device is less than that of the machine to be fed so that the speed of the fed sheets will be accelerated to enable sheets of greater length than circumference of the pull-off device to be fed.

1,874,165. BOOK HEADBANDING MECHANISM. Alfred Bredenberg, Champlain, N. Y., assignor of one-half to The Sheridan Iron Works, a Corporation of New York, and one-half to T. W. & C. B. Sheridan Company, a Corporation of New York. Filed Aug. 21, 1931. Serial No. 558,500. 18 Claims. (Cl. 11—1.)

1. Mechanism for applying a headband to a book comprising a movable registering device or lever having a feeler adapted to contact the end of the book and so determine the position of the registering device and an adjuster positioned by the feeler and adapted to determine the position of the headband relatively to the book.

1,874,427. ART OF TRANSLUCENT PRINTING. Howard J. Billings, South Acton, Mass., assignor to Arthur D. Little, Incorporated, Cambridge, Mass., a Corporation of Massachusetts. Filed Aug. 30, 1929. Serial No. 389,434. 15 Claims. (Cl. 101—426.)

1. The method of marking absorbent paper and the like materials to produce an imprint thereon simulating a water mark which comprises printing with a hot, molten fluid which has the property of congealing at so high a temperature as to solidify immediately without spreading at temperatures within the range of room temperatures.

15. A sheet of absorbent paper having a translucent imprint thereon, simulating a water mark, the imprint comprising congealed "hard wax" impregnated in the paper and confined within well defined outlines.

1,874,721. LINE CASING MACHINE. Le Roy W. Willis, Brooklyn, N. Y., assignor to Intertype Corporation, New York, N. Y., a Corporation of New York. Filed Sept. 23, 1929, Serial No. 394,604, and in Germany Oct. 13, 1928. 4 Claims. (Cl. 22—80.)

1. In a line casting machine having a line casting mold, a casting pot to contain a supply of molten metal, a plurality of separate metal injecting throats mounted on and closing the front of the pot and having alined and contiguous mouths, the pot being mounted movably to carry the mouths to and from casting position against the respective portions of the length of the mold to close the casting cavity therein, a corresponding plurality of metal injecting pumps connected to the respective mouths and mounted horizontally in the casting pot and secured thereto to move therewith, means for actuating one or more of the pumps to cause injection of metal into the mold through one or more of the mouths according to the length of the mold cavity, and means for maintaining the metal level in the casting pot above the pumps and immediately below the level of the mouths.

1,874,904. WEB ROLL SUPPORTING MECHANISM. Curtis S. Crafts, Oak Park, Ill., assignor to Goss Printing Press Company, a Corporation of Illinois. Filed Apr. 22, 1929. Serial No. 357,126. 24 Claims. (Cl. 242—58.)

12. A web roll handling mechanism including in combination means for engaging and supporting the ends of the axial orifice of a web roll, means for releasably holding the supporting means for either end out of the path of a web roll moved endwise into position and means for uniformly raising each of the supporting means to lift the web roll into running position.

1,875,291. PRINTING PRESS. William Lee Waggoner, Nashville, Tenn. Filed July 2, 1931. Serial No. 548,416. 2 Claims. (Cl. 101—391.)

2. A chase locking mechanism for printing presses, comprising a pair of bars secured upon the bed of a press at each side thereof and formed with a series of recesses providing a rack a chase locking bar having a tooth at each end to engage a pair of the recesses of the bars, and the locking bar being further provided with transverse disposed tapered recesses to receive the tapered end of a tool for prying the bar from its locked position.

1,875,565. SPOUTING SYSTEM FOR TYPE CASTING MACHINES. George L. Curle, Minneapolis, Minn. Filed Nov. 7, 1930. Serial No. 494,062. 13 Claims. (Cl. 199—59.)

1. In a type casting machine, the combination with a mold disk and front trimming knives, of a waste receptacle, and a trough constructed and arranged to extend under the mold disk to receive shavings precipitated from the mold disk and front trimming knives and discharge the same into the waste receptacle.

1,875,869. OFFSET PRINTING-PRESS. Heinrich Hense, London, England. Filed Sept. 15, 1930. Serial No. 481,891, and in Germany Nov. 22, 1929. 6 Claims. (Cl. 101—142.)

1. In an offset printing-press the combination of a printing-cylinder, offset-cylinder, impression-cylinder, sheet-delivery, pile-delivery, and a frame for supporting the cylinders, the cylinders and pile-delivery being so disposed that the rotating-axis of the offset-cylinder lies on that side of a plane containing the rotating axes of the plate-cylinder and impression-cylinder that is remote from the pile-delivery, whereby the pile-delivery thus is situated immediately below the plate-cylinder, one side of the space in which the pile-delivery is located being defined by a vertical plane that is tangent to the plate-cylinder at the side where it contacts with the offset-cylinder, so that the space housing the pile-delivery is free from all working parts except the sheet-delivery.

1,876,231. TYPE FORM TIE. George M. Hume, Fresno, Calif. Filed May 1, 1931. Serial No. 534,233. 12 Claims. (Cl. 101—404.)

10. A type tying device comprising a block adapted to lie alongside the form, a tape extending through the block and around the form, a flat spring mounted longitudinally on the block with its opposite ends arranged to impinge opposite ends respectively of the tape to prevent retraction thereof after tensioning around the type, a releasing cam under opposite ends of the spring for releasing the hold of either end upon the tape.

1,876,255. ROTARY PRINTING MACHINE. Frank C. Marquardt, Brooklyn, N. Y., assignor to American Bank Note Company, New York, N. Y., a Corporation of New York. Filed May 16, 1930. Serial No. 452,955. 14 Claims. (Cl. 271—54.)

1. A rotary printing machine, embodying therein the combination with a printing couple including a plate cylinder adapted to receive an intaglio, engraved or undersurface printing plate, and an impression cylinder or D-roll cooperating therewith, of a sheet feeding mechanism embodying therein a fixed support for the forward edge of a sheet adjacent the printing couple front gauge stops cooperating with the fixed support to accurately position the sheet in relation to the couple a reciprocatory support for the sheet, pusher members carried by and movable with the reciprocatory support, means adapted to intermittently actuate the front gauge stops, the pusher members and the reciprocatory support to advance a sheet into frictional engagement with the members of the printing couple, and mechanisms adapted to remove one sheet at a time from a stack and deposit it upon and in operative relation to the fixed support, the reciprocatory support, the front gauge stops and the pusher members.

1,876,369. SELF-ALIGNING BEARING FOR FOLDING MACHINE ROLLERS. Robert J. Waterworth, Sidney, Ohio. Filed Sept. 26, 1929. Serial No. 395,380. 10 Claims. (Cl. 308—59.)

1. In a paper folding machine, a frame including a pair of opposed walls each having a slot formed therein, each of the slots being enlarged at one end to provide a circular aperture, the slots and apertures being in alignment transversely between the walls, transverse paper folding rollers each having a trunnion at each end, bearings for the trunnions each comprising a spool adapted to extend into a slot aperture and having a circumferential groove adapted to receive the opposed edges of the slot, and a tensioning spring extending transversely of each slot and connected to the adjacent wall and bearing against the bearing spool nearest the slot aperture.

1,877,387. DRIVING MECHANISM FOR PRINTING PRESSES. Allan J. Cline, Chicago, Ill. Filed Aug. 8, 1931. Serial No. 555,956. 7 Claims. (Cl. 270—5.)

1. A unit type press comprising a series of associated printing units, individual motors for driving each of the units, the motors being positioned with their armature shafts in axial alignment with one another, and connecting means extending between the armature shafts for equalizing the speed of the motors.

Latest Printing Equipment Mechanisms

Babcock Sheet-Feed, Two Color Rotary Press

Officials of The Babcock Printing Press & Mfg. Co., New London, Conn., have announced the completion of a new type two-color sheet-feed Rotary Printing Press, capable of producing upwards of 3000 impressions per hour according to size and kind of work being done.

The maximum sheet size is 50 in. by 72 in.; maximum form, 48½ in. by 70 in.; size of press on foundation, 8 ft. 4 in. by 18 ft. 3 in.; size overall including feeder (not including work platforms) 12 ft. by 33 ft. 3 in.; size overall (including feeder and working platforms) 14 ft. 2 in. by 39 ft. 10 in.

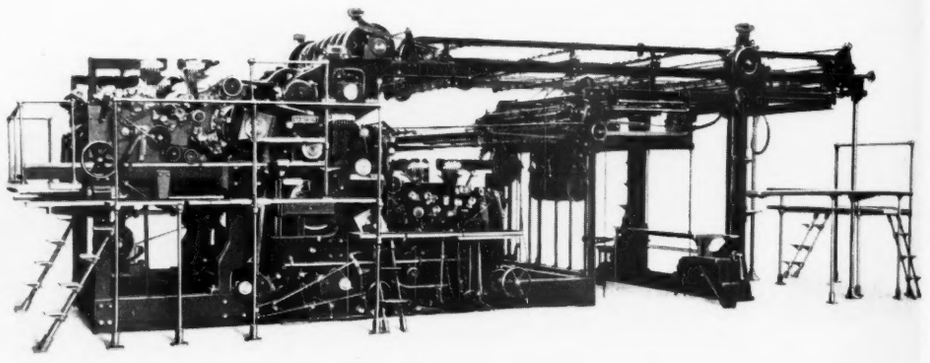
High cylinder or running speed; rigidity (ability to retain adjustments); ability to obtain and retain perfect register, thorough distribution, maximum accessibility and simplified adjustments which have been engineered into this press, enable the printer to obtain maximum net production.

Special attention has been given to the design of all parts which in any way affect the strength of the impression so that the cylinders are held firmly together during impression, ease of makeready is provided, quiet running is insured with minimum vibration and perfectly tuned and balanced parts are kept in perfect tune and balance.

The delivery is of the chain-gripper type, provision being made for adjusting the sheet slow-down and the position of the sheet on the pile, while the press is running.

In the matter of register, all gears are of extra wide construction and the printing train is supplied with helical teeth. The perfectly balanced transfer reel is the same diameter as the cylinders and makes only one revolution per impression so that every gripper cam is fixed. The transfer reel shaft is over 6 in. diameter and runs perfectly true under all conditions. The feed guides swing directly away from the sheet as the grippers take it. All these insure perfect register without vibration of the parts. Once the sheet is properly placed at the guides, it is sure to go through in perfect register.

The usual Babcock rotary type of distribution is fitted



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Are You Sharing the Other Fellows' Knowledge?

The manufacturers of every product have facts and figures that are of value to the users. This is particularly true of Roller Manufacturers. Perfect presswork depends on a perfect distribution of ink. It is this final operation that makes or breaks the finished job. Ten years ago there was little to choose from in rollers. Today there is a roller suited to every class of printing. The Roller Maker knows what that roller is. Ask him.

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We manufacture fourteen types of rollers listed below. and each has a very definite place in some branch of the printing industry. It has taken years of close application to the roller and printing business to perfect these rollers. We have on our staff expert printers, and their suggestions have been a benefit to us in the development of these rollers.

Fibrous seasonal composition rollers for newspaper and and all kinds of letterpress printing.

Duplex non-meltable rollers for newspaper, high-speed automatic, and all kinds of letterpress printing.

Star rubber rollers for newspaper printing.

Star rubber rollers for water-color printing.

Star rubber rollers for halftone and process color printing.

Crescent composition ink rollers for offset printing.

Crescent composition water rollers for offset printing.

Leather rollers for offset and tinplate printing.

Molleton water rollers for offset and tinplate printing.

Moleskin water rollers for tinplate printing.

Gravure rollers for sheet-fed photogravure printing.

Photo-gelatin rollers for photo-gelatin printing

Plush rollers for use on perfector and rotary presses.

Cloth-covered rollers for ductor rollers on rotary presses and corrugating machines.

For glassine or cellophane printing, muslin bag and fabric printing, wallpaper and graining work, and all kinds of printing where ink, varnish or lacquer are used, our composition and rubber rollers give excellent service.

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IT was up to us to prove our claims. First trial was made in July, 1917. Wood Dry Mats made good and in September, 1917, were adopted as regular equipment.

You, too, may "try before you buy." Return this coupon telling whether you want sample lot or trial case (500 mats).

Whether you order mats or not, your men may receive a supply of hand mitts free of charge—a little taste of "Wood Service."

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with an additional unit operating between the fountain and the usual ink drum unit which distributes the ink thoroughly before it is transferred to the drum unit. Ink roller speed is stepped down between form roller and auxiliary units, so as to eliminate starting and stopping shock. The amount of vibration is readily adjusted (by means of a hand screw) from zero up to a maximum of approximately 3 in. All composition rollers are alike and 5 in. diameter.

Each color is printed on its own impression cylinder. Ample room is provided for both plating and makeready and platforms are provided.

The plate cylinders are adjusted to and from the impression cylinders with adjusting screws and nuts so positioned that the operator can stand in a free working position and without interference of other parts while making adjustments.

All vital bearings are lubricated through either automatic flushing multiple sight-feed oilers, or the Alemite-Zerke system, using in each case the type best adapted to the purpose. All vital journals are either fitted with ball bearings or with bronze bushings. The driving motor, conveniently located underneath the press, is readily accessible for cleaning or repairs.

Waterlox Increases Life of Cork Moulding Blankets

Waterlox, a water, weather and oil-proofing material which has been on the market for several years, has been found to work exceptionally well on cork moulding blankets in the stereotype departments of several large newspapers. It is claimed that by giving each side of a cork blanket three thin coats of Waterlox (allowing ample time between coats for drying, and dusting with talcum powder for the first few impressions) the ordinary life of the blanket has been about tripled.

In addition to the longer service obtained, this treatment prevents the blanket from absorbing the moisture of the dry mat while moulding and makes the blanket more resilient. Less impression is required to get depth in the mat, and a blanket treated with Waterlox supplies a surface which causes the plates to release evenly, resulting a fine impression.

Waterlox has the appearance of a thin, transparent varnish, but after becoming thoroughly dry will not crack, check or peel, acting like a thin rubber sheet, and resisting the action of salt water, salt air, rust, certain acids, acid fumes, calcium chloride and temperature extremes ranging from 50 deg. below zero to 700 deg. F.

It is not an expensive product, and is sold in pint, quart and single gallon sizes. In 5-gallon and 30-gallon drums the price is considerably lower.

Only a few simple precautions need be observed in making the application.

As the present time Waterlox is being tested as an oil, water, grease and ink resistant on newspaper press blankets and results will be announced at a later date.

Information as to its various uses and distributing points may be had of Waterlox, Inc., Barlum Tower, Detroit.

Continued on page 26

HOE HAS RECEIVED

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"THERE is no use beating about the bush and guessing what's wrong with this metal," says the head stereotyper. "Let's ask Imperial! They can probably help us out of our difficulty in a hurry. From my experience in the past I know that whatever they tell us will be right.

"When you get in trouble it is kind of nice to have somebody you can go to who can straighten you out. Imperial has been helping to solve the problems of printers and publishers for years and their experience means a good deal. And that is one of the reasons why I believe it pays to

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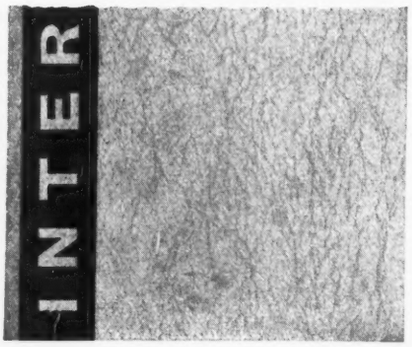


Intertype Corporation is distributing to users of Intertype products a new book which shows a complete list of parts, supplies and accessories.

This book consists of 368 pages. It carries numbered illustrations of all Intertype parts with corresponding descriptions and a twenty-page numerical index so that any wanted part can be located quickly.

This book will be supplied free, upon request by Intertype Corporation or any of its five branch offices.

Air Conditioning in the Printing Industry

(Continued from page 9)

the wood blocks used in backing up cuts and plates. These swell or shrink as they absorb or release moisture, which without make-ready, would cause too great a variation in type-height.

Now we come to the paper itself, made of cellulose fibres laid in one direction, often mixed with stiffening, strengthening or surfacing materials of various kinds. It is beyond the scope of this discussion to classify the effect of varying the moisture content of the air, on all kinds of paper. Thousands of tests on many varieties of paper, made by paper mills, printing plants and testing laboratories, have definitely established the fact that paper is extremely sensitive to the moisture content of the surrounding atmosphere.

Fig. 5, the average of many reported tests, shows the effect of relative humidity on the moisture content of paper, on its changes in dimensions and on its folding strength.

STATIC

I have not been able to find any figures which would indicate the varying intensity of static electricity, with changing relative humidities. There is, however, entire agreement on the fact that as dry air is an efficient insulator, lack of sufficient moisture favors the charging of paper with static electricity, making it troublesome to handle in both the press-room and the bindery. There are a number of methods and devices for counteracting the effects of high static electricity on paper, but there is only one definite method of eliminating the source of the trouble. That method is simply to add to the air sufficient moisture, so that it will conduct static electricity away from the paper as rapidly as it is formed.

Several interesting facts are brought out by the curves in Fig. 5. Notice how straight are the lines of "Moisture Content of Paper" and "Changes in Width of Paper" and "Changes in Length of Paper." This indicates how exactly the moisture content of paper is in balance at only one relative humidity of the surrounding air. Furthermore, it shows how the cellulose fibres expand and contract in a crosswise direction, at a much higher rate than lengthwise.

FOLDING ENDURANCE OF PAPER

The folding endurance of paper sheets is likewise dependent on the moisture content of the paper, but to an even greater extent than the changes in dimensions. Beyond a rela-

tive humidity of 80%, most papers begin to lose folding strength, but as this condition is seldom encountered, it is not worthwhile showing on the chart.

If the charts in the various figures and the discussion indicate anything of value, it is this: that of all the factors entering into air conditioning, the percentage of moisture content, or relative humidity, has the greatest effect on the performance of paper, rollers, and ink. Furthermore, the exact relative humidity to be maintained is not so important as that the wide variation in moisture content be eliminated.

THE TWO MAJOR PROBLEMS OF AIR CONDITIONING

There are two major problems of air conditioning in the printing industry—the supplying of deficient moisture in Winter and the elimination of surplus moisture in Summer. It costs approximately 2½c per press hour to supply sufficient moisture, against 14c per press hour to eliminate the surplus.

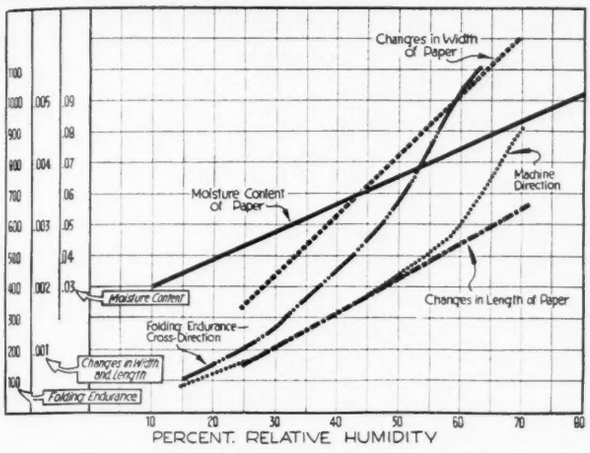


Fig. 5.—The Effect of Relative Humidity on Paper.

The installation cost of humidifying equipment is likewise much lower than the cost of equipment for dehumidifying and cooling.

Fortunately for all of us, Mother Nature is a better guardian of our health and well-being than are our fellow-men. There is no disputing the comfort advantages of cooling the air and removing its excess moisture in the Summer—and there is no doubt but that the resulting improvement in the condition of our printing materials goes far toward justifying the cost of the improvement.

However, our greatest offender, the excessive dryness in our heated buildings, can be overcome easily, with equipment adequately tested, easily installed and cheaply operated. I have yet to hear of an owner or operator who would care to shut off his humidifying system and return to the conditions which prevailed before the installation was made.

Let the Southworth Machine Company tell you in reference to the saving which can be made by

Southworth Humidifiers

•

SOUTHWORTH MACHINE COMPANY
PORTLAND, MAINE

BURGESS CHROME MATS

BURGESS SERVICE and QUALITY

•

August 12, 1932.

Burgess Cellulose Company,
Freeport, Illinois.

"Gentlemen:—

I am sending you a few copies of our paper. It is only fair that credit be paid to you for the results we attain.

When we come to talk about buckles I can honestly say that we have not had a buckle in five months, of course we have some but the reason for that is pinching in the casting box which is not the fault of the mat.

We received comments on the following advertisements—Gulf and Sohio in our August 4 issue, in our August 10 issue Lux Soap and Old Gold, and in our August 12 issue the Ivory Soap Ad—this ad was just as good and in some cases better than the larger plants produced.

I also want to say a word concerning your service man, namely, Mr Stephen Chipchase. It is a pleasure to have him call as he always has some helpful hints which are very helpful to us and which we are grateful for."

Yours sincerely,

Signed—Irv J. Doyen,
Stereotype Foreman,
Sandusky Newspapers, Inc.,
Sandusky, Ohio.

•

You too can benefit from Burgess Quality and Service. Write now for your demonstration.

BURGESS CELLULOSE COMPANY
Freeport, Illinois

BURGESS CHROME MATS

BURGESS CHROME MATS

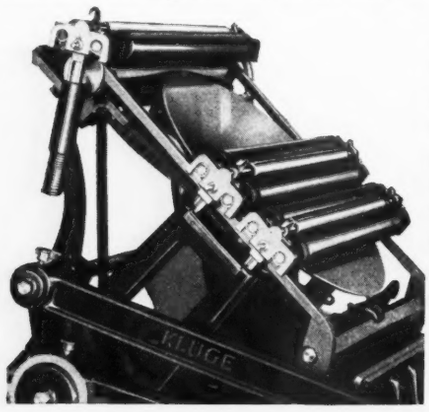
BURGESS CHROME MATS

Latest Printing Equipment Mechanisms

(Continued from page 22)

The Kluge "Selec-Tone" Ink Distribution

Brandtjen & Kluge, Inc., St. Paul, Minn., announce the purchase of the Schussler and Daane patents. These patents cover broadly a construction capable of permitting ink to be fed to an ink plate and regulated in variable pre-determined amounts throughout the entire length of the ink plate and thence to the printing forms, so that ink will be fed in relatively different amounts to the printing form, depending on the requirements of the form. Another feature of the invention is to produce a device capable of depositing ink upon the inking plate in a manner which assures complete distribution of the ink upon the entire circumference of the form-inking rollers, in variable amounts upon different parts of the length of the form inking rollers, depending upon the requirements of the form.



The inventions combined with the present applications for patents pending by Brandtjen & Kluge, Inc., provide further means whereby auxiliary ink or ductor rollers are caused to travel approximately the entire length of the ink plate. These distributing rollers rest upon a full length fountain located in the upper end of the ink plate and having end-bearers at each extremity for the proper rotation of the distributing rollers. The rotation of the fountain roller is adjustable to insure the proper quantity of ink being supplied to the distributing rollers.

As is shown in the illustration, the form rollers receive their ink from the plate whereon the ink has been properly distributed by the distributing rollers.

It is claimed by Brandtjen & Kluge, Inc., that angle rollers aid materially in the proper distribution of ink. This result is obtained in platen press construction through the use of controlled rotation of the ink disc. Where it is desired to control the film of ink in varying density, the ink disc is given a very nominal rotation through a worm gear drive. Where the work being done does not require this fine adjustment, the rotation of the ink disc can be increased by the mere moving of a lever, thereby producing a similar effect to increasing the angle of angle rollers.

New Hoe Plate-Graining Machine

R. Hoe & Co., Inc., 138th St. and East River, New York, N. Y., have made announcement of a new dynamically-balanced ball-bearing zinc and aluminum plate-graining machine.

All rotating parts are fully protected against water, sand, etc., and the new features described below result in a smooth-running and practically frictionless mechanism.

The frame-work and graining box are made of structural steel having all joints welded which eliminates all bolts.

The box is made of steel plate reinforced with angle-iron and has inclined edges which decreases the bouncing of the graining marbles and consequently reduces the noise and splashing of water against the sides of the box.

The box has a screened gate value and large opening to facilitate cleaning.

Super-Elasta is the name of our newly developed heat-proof and fool-proof rollers—

Research laboratories working in conjunction with us since January, 1932, have developed the real formula for super-speed presses—Cost a little more but how they do run and print!!!

Also a brand-new formula at regular prices for Miehle Verticals and Horizontals, Kellys, Miller High Speeds—etc.—

There is a lot of roller joy in the world for you this Fall and Winter if you take advantage of it—

And when it's guaranteed by GODFREY ROLLER COMPANY, you know it *is* guaranteed—

Further information furnished on request—

FALL and WINTER ROLLERS READY NOW!!!

Distributors for
MANHATTAN RUBBER ROLLERS

GODFREY PRINTERS ROLLERS

GODFREY ROLLER COMPANY, 211-13-15 N. Camac Street, Philadelphia

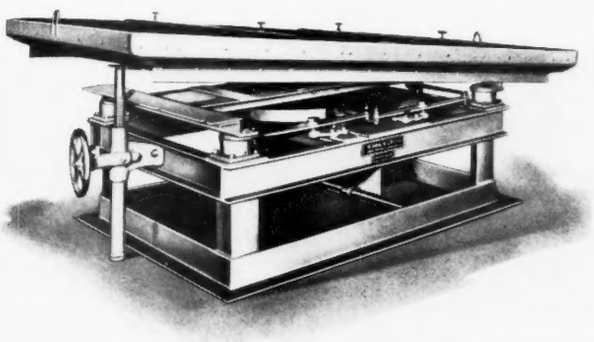
Wm. C. Squibb, Pres. Wm. P. Squibb, Sec.-Treas.

REAL LIVE ROLLERS SINCE 1865

The frame support for the graining box rests on four steel balls which roll on grease-tight enclosed and hardened surfaces. The box is rotated by a single crank carrying a large-sized self-aligning ball-bearing.

The gears and bearings of the drive are fully enclosed, running in oil; other bearings are provided with grease fittings to allow use of a grease gun. The crank shaft has a single row ball-bearing and the pinion shaft a double row.

The support surface of the framing on the floor is 72″x54″ x4″ wide, and the overall dimensions of the machine are determined by the outside size of the box. The height from the floor to the rim of the box is approximately 33″. The net weight is about 3000 pounds.



The adjustable motor base is part of the welded steel frame. Belt or chain drive can be furnished for a predetermined speed ranging from 150 to 250 r. p. m. A 1 h. p. motor is required to operate the machine.

Either rubber or wood linings are supplied as accessories with the machine. Brass holding bars are provided on the inner sides of the box to hold the rubber lining.

Super "Elasta," New Non-Meltable Roller

The Godfrey Roller Co., 211-15 No. Camac St., Philadelphia, Pa., announces a new non-meltable composition printing press roller, which has been named Super "Elasta." Dating from January this year, officials of the company, together with its chemists, have spent considerable time developing a satisfactory non-meltable roller which will stand up under any kind of heat and one which could be guaranteed to run through a whole season for a period of six to eight months.

The Super "Elasta" roller will resist to a great extent the cracking caused by certain inks, but which cracking cannot be fully eliminated on account of the nature of the chemicals in the inks. No claim is made that this roller will last in all seasons, as when glue and glycerine are used no such thing is possible. Glue and glycerine are required in the making of satisfactory printers' rollers on account of the hygroscopic property of the glycerine and the intensive strength, elasticity, suction and tack of glue.

This new development is for high-speed presses, such as, the Miehle Vertical, Kelly, Miller High-Speed and other automatic machines that require constant running and the use of varnish inks. It is also used for high-speed work in newspapers where the expense of rubber rollers cannot be afforded. It is a fact that all rollers will suffer surface cuts where used with rules, and that no roller after it has lost its face, whether composition or rubber, will be good for high-class printing results, unless it is either renewed or resurfaced.

New Aniline Printing Press

Information about a new multi-color rotary press, for printing with aniline inks on cellophane, glassine, all printing papers, kraft, etc., is being distributed by H. H. Heinrich, Inc., 200 Varick Street, New York. The machine is de-

SATISFIED WITH CERTIFIED

CERTIFIED DRY MATS

FULL VALUE

Only a mat that is dependable for day in and day out performance offers full value.

Being easy molding, quick scorching, sure casting and singularly free from buckles and chills, Certifieds offer publishers full value for every penny they cost.

And above all, Certifieds make possible printing plates that insure cleanly and clearly printed papers. Inherent working qualities and good printing make "Certified" on a dry mat stand for full value.

Why not check Certified value today? Samples will be gladly furnished you free of charge and without obligation so that you can give them a trial in your own plant under your own working conditions.

And remember, there is now a Certified Dry Mat to meet your purse and purpose.

CERTIFIED DRY MAT CORPORATION

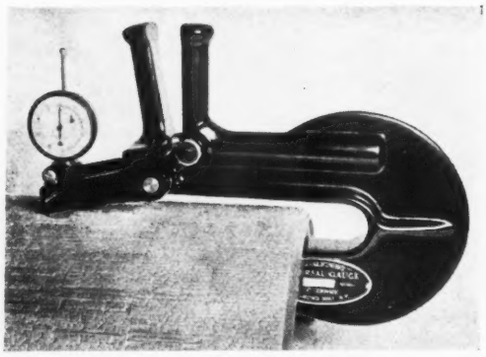
338 MADISON AVENUE ▾ ▾ ▾ ▾ NEW YORK, N. Y.

For dependable stereotyping--- use Certified Dry Mats

Made in U. S. A.

THE ZENKE

SELF-ALIGNING UNIVERSAL GAUGE



Without the necessity of cutting, accurately measures the thickness of any part of Plates, Curved and Flat, Blankets, Mats, etc.

Measures depth of Etchings, Electros, Bowls of Letters in Mats and Plates.

Price, $85.00, F. O. B., New York

HENRY C. ZENKE

8927 120th Street Richmond Hill, N. Y. City

Why your plant needs

COST CUTTER SAWS

Because they speed up production—increase accuracy—save time and labor—Cost Cutter Saws are essential in your plant. They quickly cut to points or fractions of points, leads, slugs, rule, type, borders, ornaments, stereotypes, electrotypes and other printing office materials of lead, brass, copper, zinc and wood.

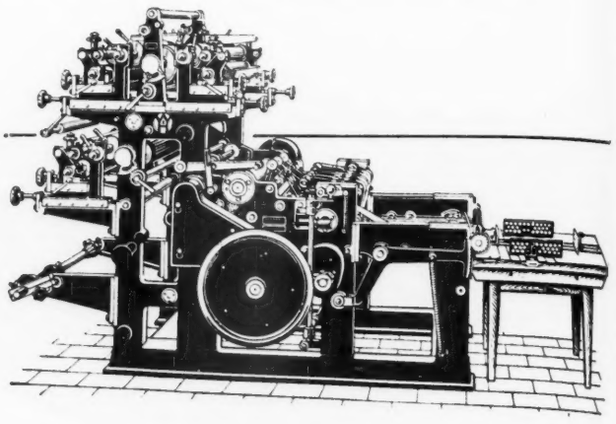
Model "B" shown here, is an all-purpose saw trimmer for large and or small plants. It saws and trims at a single operation, miters, under-cuts to points, grinds, makes outside and inside mortises and may be equipped for beveling, rabbeting, surfacing, and other special operations. For smaller plants, ad-alleys, or as an auxiliary, a smaller machine, Model "A," is offered.

Write today for complete details and prices.

C. B. NELSON & COMPANY

727 South Dearborn Street • Chicago, Illinois

signed especially for printing continuous background patterns, fancy box wrappings, candy wrappers, and other rolls used by manufacturers of bags and other paper products. It is made by Windmoller & Holscher, whose printing presses of various types are widely used throughout the world.



The manufacturers point out that this press is adaptable to many uses, because of its flexibility. It can be adjusted to print on only one side of the web, in three or four colors, or to print on both sides at once. It slits and rewinds the web, or cuts it up into sheets of various sizes, as required. It cuts a straight, no serrated, edge—an essential requirement in the handling of cellophane.

Speeds up to 7700 yards of web or 9000 sheets per hours are claimed for this new press, whether used as a separate unit or directly connected with reel-fed bag or other machines. It is made in two models, with reel widths of approximately 20, 30, 40 and 48 in., respectively.

Spaceband Gives Greater Range of Justification

(Continued from page 18)

type or the Intertype Company. All you need to do is to order Teletypesetter bands and they will know just what you mean. It is a good spaceband to use for regular hand-operated machines because it will save about 9 per cent of the hand spacing which is now necessary with regular thick spacebands."

In comparison with regular thick spacebands used on manually-operated line-composing machines, it will be seen that with the Teletypesetter spaceband the possibility of expanding lines to full measure has been increased 33 1/3 per cent without loss of initial spacing between words. In addition to the greater expansion possibilities, the Teletypesetter spaceband possesses greater strength on account of its increased thickness. Its maximum expansive power is about 0.084 in. or approximately 6 points.

It can be seen readily that at its thinnest point this spaceband is thin enough to give the normally close spacing desired for comparatively small faces, and at its other justification points it is thick enough to provide the sort of spacing desired for display faces and would therefore be useful on any machine, particularly those machines which are used for both small and large-face composition, tabular composition, markets, baseball and so on.

Latest Linotype Typographic Developments

Among the latest typographic developments announced by the Mergenthaler Linotype Company are 9 point Baskerville, 10 and 12 point Ionic No. 5, 12 point Remington Typewriter No. 4, 10 point Underwood Typewriter No. 4, 8 point Remington Typewriter No. 2 with No. 3 and a new series of black dots of two different weights made to center on various point bodies.

"Nine point Baskerville," says C. H. Griffith, Assistant to the President of the Mergenthaler organization, "is the latest size in this Linotype family that is becoming more and more popular with book designers, printers, magazine publishers and advertisers. This new size is particularly appropriate for glossaries, bibliographic data, foot notes, indices, appendices, and so forth. With its introduction, Linotype Baskerville is now available in seven sizes, 8, 9, 10, 11, 12, 14 and 16 point.

9 Point Linotype Baskerville with Italic and Small Capitals

LINOTYPE BASKERVILLE, in the roman, is an exact weight for weight and curve for curve copy of JOHN BASKERVILLE'S *famous printing type.* Modifications of the italic, to fit the

"With the completion of 10 and 12 point Ionic No. 5, the Ionic family is now available in the 5, 5½, 6, 6½, 6¾, 7, 7½, 8, 9, 10 and 12 point sizes, in combination with Bold Face No. 2 or with Italic. Both the 10 and 12 point may be used to advantage for lead paragraphs of main news stories and on editorial and feature pages as well as in the advertising columns and for many forms of commercial printing.

12 Point Linotype Ionic No. 5 with Bold Face No. 2

How is one to assess and evaluate a face of type in terms of its esthetic design?

"To the variety of Remington and Underwood Typewriter faces previously available on the Linotype we have added 12 point Remington No. 4, and 10 point Underwood No. 4, to conform to the designs of faces on the latest models of Remington and Underwood typewriters. These faces have the light weight and clean cut appearance so essential for close duplication of actual typewriting, when printed through silk.

"Two new 8 point Typewriter faces have been cut to meet recent requirements of railroad tariff printing. One face is 6 point set, the other 5 point set, and both are available in combination with bold face."

Harris-Seybold-Potter Company Promotions

Thomas R. Jones, Vice President and General Manager of the Harris-Seybold-Potter Company, printing equipment manufacturers, announces the election by the Board of Directors of Howard M. Hubbard, Secretary, and Norman L. Daney, Treasurer.

Mr. Hubbard came to the company in September, 1930, as Comptroller, which position he continues to hold in addition to his new duties as Secretary. Mr. Hubbard's experience includes that of Industrial Engineer with the Ballard Machine Tool Company, Bridgeport, Connecticut, as well as Assistant to the Vice President in Charge of Production of the Royal Baking Powder Company, now a division of Standard Brands, Incorporated.

In 1927 he was a delegate of The Taylor Society to the third International Management Conference in Rome, Italy,

One of Our Customers Wrote in, Asking as to

whether we

Rebuilt First Elevator Jaws,

We do, and make a very good job of it too.

Also Assembling Elevators.

And the cost of this work is most reasonable.

Remember that a dollar goes a long way if you use "Star" Spacebands, Liners, Distributor Box Bars, Second Elevator Bars, Back Knives, Side Knives, Pinion Gears, Back Jaws, Molds, Duplex Rails, etc., etc.

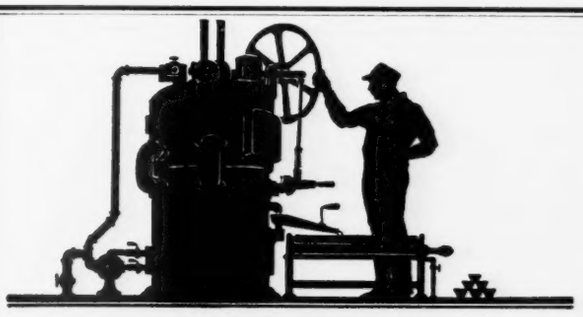
Our "Ironclad Guarantee" protects every purchase, as it has for the last nine years.

A complete catolog and price list of Linotype and Intertype parts, repairs and accessories, sent on request.

Linotype Parts Corporation

NEW YORK CITY
270 Lafayette St.

KANSAS CITY, MO.
314 West 10th St.



THE MONARCH
MONOMETER
A
PRINTERS' MELTING FURNACE

WITH
THERMOSTATIC CONTROL
OF TEMPERATURE.
ELECTRICITY, GAS, OR OIL
AS FUEL.
AUTOMATIC MIXING AND
STIRRING OF METAL.
DROSSLESS & FUMELESS.
MADE IN CAPACITIES
FROM 500 ~ 10,000 LBS.

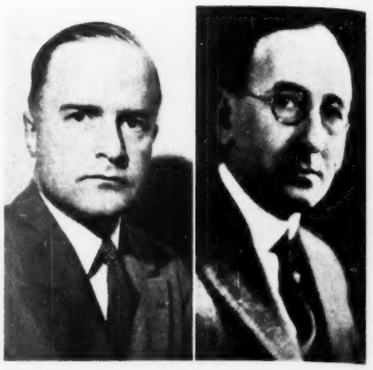
WRITE FOR COMPLETE CATALOG P.E.E.

The Monarch Engineering & Mfg. Co.
701 - 702 American Bldg., Baltimore, Md., U. S. A.
Works, Curtis Bay, Md.

and for a number of years he was company representative to the American Management Association, and has served on the National Management Committee of the American Society of Mechanical Engineers.

Norman L. Daney is also a graduate Mechanical Engineer, and joined the Harris-Seybold-Potter organization in May, 1932.

In 1913, Mr. Daney went with the Chapman Engineering Company, Mount Vernon, Ohio, as Sales Engineer. In 1916 he was invited to join the C. and G. Cooper Company, Mount Vernon, engine builders, who were the owners of Chapman Engineering Company. His first place there was that of Production Engineer. After reorganizing shop production he was made Assistant Treasurer, later Comptroller, and in 1920 Treasurer of the Company, which position he held for more than ten years. Concurrent with his activities with the Cooper Company, which in 1929 became the Cooper Bessemer Company, he was Treasurer and General Manager of the Chapman Engineering Company, and Treasurer and General Manager of Chapman-Stein Furnace Company, a subsidiary, also located at Mount Vernon.



Messrs. Howard M. Hubbard and Norman L. Daney, Secretary and Treasurer, respectively, of Harris-Seybold-Potter Co.

Any-Angle Furniture
Makes it possible to lock any form in any diagonal position, or at any angle with straight lines in adjacent forms, in no more time than is necessary for ordinary lock-up. . . No more cutting of odd shapes from old cut bases, nor pouring metal or plaster into the form. . . ANY-ANGLE saves time, eliminates work-ups and pull-outs. . . Without this practical labor-saving device no composing-room's efficiency is complete. ✣ Order from your dealer or direct
Per Set of Four Corners As Shown . . . $3.85
Write for Circular, Giving Name of Your Dealer
Padgett Any-Angle Furniture Co.
2019-21 Bryan Street, DALLAS, TEXAS

MOTORS

NEW -:- REBUILT

WE STOCK

Cutler-Hammer Renewal Parts

Wiring, Rewinding, Repairs

Motors Controller

Hyre Your Responsible Electragist

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HYRE ELECTRIC CO.

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Telephone, Harrison 6740

When Writing to Any of our Advertisers Be Sure to Mention Printing Equipment Engineer

Catalogs, Books and Bulletins

Readers of PRINTING EQUIPMENT ENGINEER who are interested in securing any of the catalogs, books or bulletins listed below can do so by checking the literature desired. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded without cost except where noted.

Humidity Control and Paper Conditioning—Bulletin describing benefits of humidification system and the control of static electricity in printing machinery. Paper conditioning equipment is also discussed.

Karnak—An eight-page exposition printed in black and colors, demonstrating the various sizes of Karnak type face in two weights.

Foremen's Safety Conferences—Programs for a series of seven foremen's conferences on safety.

Small A.-C. Hoist Motors—Bulletin on totally enclosed motors having high starting torque and high slip. Designed for application to cranes and hoists of smaller sizes.

"Commercial Printing by Offset"—A 32-page booklet demonstrating, exhaustively the advantages of certain forms of commercial printing by the offset process. Data on a typical offset equipment is given, as well as cost data for operation.

Improved Gas-Fired Melting Furnaces—Illustrated bulletin giving performance and specification data on linotype, stereotype and monotype melting furnaces.

Bulletin—Describing and illustrating vital parts for replacement purposes on linotype machines.

Printing Equipment Engineer,
1370 Ontario St., Cleveland, Ohio.

Gentlemen: Please send the literature checked above without obligation.

Name of Company_____

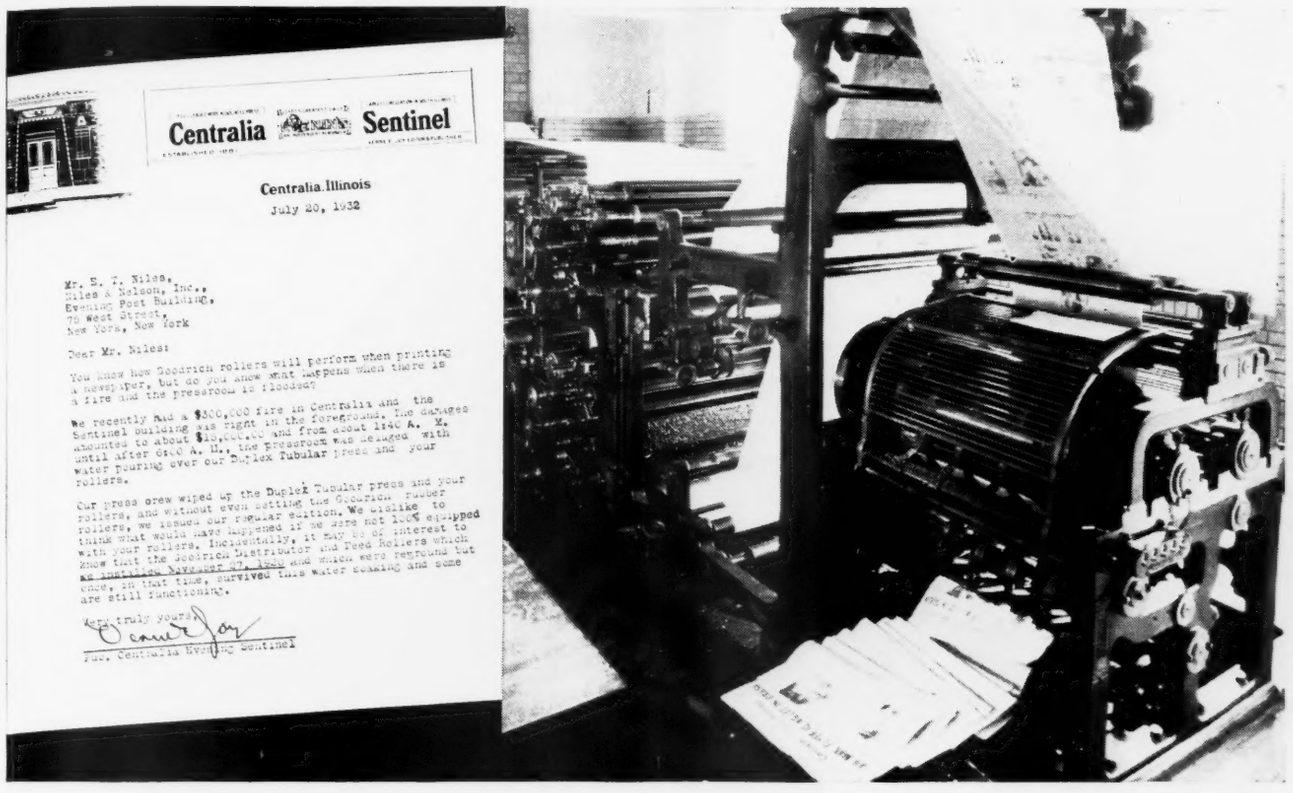
Attention of_____

Position_____

Street Address_____

City_____ State_____

A $15,000 FIRE


Centralia Sentinel
Centralia, Illinois
July 20, 1932
Mr. E. T. Niles,
Niles & Nelson, Inc.,
Evening Post Building,
75 West Street,
New York, New York
Dear Mr. Niles:
You know how Goodrich rollers will perform when printing a newspaper, but do you know what happens when there is a fire and the pressroom is flooded?
We recently had a $300,000 fire in Centralia and the Sentinel building was right in the foreground. The damages amounted to about $15,000.00 and from about 1:40 A. M. until after 6:00 A. M., the pressroom was deluged with water pouring over our Duplex Tubular press and your rollers.
Our press crew wiped up the Duplex Tubular press and your rollers, and without even setting the Goodrich rubber rollers, we issued our regular edition. We would like to think what would have happened if we were not 100% equipped with your rollers. Incidentally, it may be of interest to know that the Goodrich Distributor and Feed Rollers which [illegible] and which were removed but once, in that time, survived this water soaking and some are still functioning.
Very truly yours,
The Centralia Evening Sentinel

But they wiped off the Goodrich Rollers and printed their regular edition

AT 1:40 A.M. the fire reached the Sentinel plant. Sprinklers cut in. For five hours water poured over the Duplex Tubular. When it was over the crew wiped up the press and the Goodrich Rollers — then printed their regular daily edition.

But read this letter yourself. Then think of the Goodrich Rollers — some of them 12 years old — ready to go after a mere wiping up.

We don't make Goodrich Rollers to go through fires. But the way they came through at the Sentinel's plant proves they can take heavy doses of things that ruin other rollers in no time. It emphasizes that heat and moisture have no effect on them. It shows that the plant that uses them can keep going without thinking of the rollers. It forecasts a saving of money for users because of the extra wear these sturdy rollers give.

We would like to send the particulars about Goodrich Rubber Rollers. Write and ask us for them today.

NILES & NELSON, Inc.

75 West Street, New York — *Exclusive Distributors* — 400 W. Madison St., Chicago

Goodrich *Printers'* Rollers

DON'T RELY ON LOCAL BUSINESS ONLY

Confining your business to your own city means restricting your profits and depending on one city alone to develop your business. Tell our readers about your merchandise or special services in these pages and thereby extend your business into more than 1,500 different localities. When residents of your city are not buying you have persons located all over the United States to draw upon to make up for any local falling off in business.

ARTS & DECORATION readers no matter where they live, are predisposed to buy from our advertisers. They know ARTS & DECORATION is America's greatest market place for all those delightful and charming accessories which contribute to making the home beautiful, comfortable.

Spacing Short or Centered Lines by Hand is

An Unnecessary Expense

Plan now
for your big game shooting

The weeks will slip away quickly. Provide yourself now with the rifle and equipment you need for your big game shooting.

In addition to full stocks of all standard makes, foreign and domestic, we have a fine assortment of new, used, shop-worn rifles ices ed. ws

MARKS THE SPOTS

Where Money Can Be Saved With a NEW INTERTYPE Equipped With Automatic Quadder and Centerer

A very large amount of composition in any printing or publishing plant consists of short and centered lines of type in all sizes. Many of these lines require hand spacing before casting—an unnecessary expense.

This extra and unnecessary expense can now be eliminated by using a *New Intertype* equipped with the *New Intertype* Quadder and Centerer which *Automatically* Quads or Centers a character, a word, or a line of any size type, from 5 to 60 point, on any length of slug up to 42 picas, with or without spacebands.

This *New Intertype* Device is now in actual use throughout the world saving money and time for many progressive publishers and printers. Let us demonstrate its dollars and cents value to you. The nearest Intertype office has further interesting facts for the asking.

INTERTYPE

360 Furman Street, Brooklyn, N. Y.
Chicago New Orleans Los Angeles
San Francisco Boston
Canada: Toronto Type Foundry Co. Ltd.
Distributors Throughout the World

THE HUN SCHOOL
PRINCETON, NEW JERSEY

Preparation for all colleges
Athletics including Crew and Polo

A five day plan for younger boys from Metropolitan area
Forty acre campus

Address: John G. Hun, Ph.D.,
112 Stockton Street

THE ATCHISON-TOPEKA-WICHITA AIR EXPRESS
DAILY SERVICE
FARE $6

SHIPPING
MERCHANDISE PACKAGES LIMIT
TO 75 POUNDS – SIZES
SPECIFIED IN NEW BULLE

A FLEET OF AIRPLANES
MAIL AND MERCHANDISE
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